Chapter 3.2

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AGFA DICOM Bridge, Version 2.0b
(User Guide)

Configuration Viewer Software
(User Manual)

Supported Printers **DD+DIS138.02E**

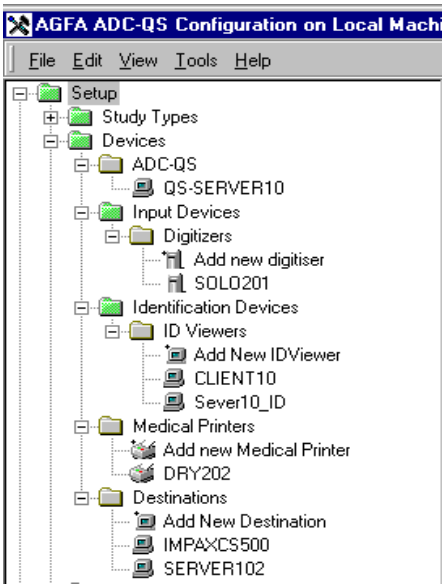
1 System Configuration

There are three possibilities to configure ADCQS.2.1. All three possibilities have their justification if they are applied for the purpose they are designed for:

- **Configuration Viewer** → Standard configuration tool for the ADCQS for onsite configuration, configuration changes and enhancements
- **CPF-file created by CCM Tool**→ Can be used after initial setup to save configuration work; should not be used later on anymore for configuration changes or enhancements
- **Cloning** → Allows to duplicate stations; this helps especially to reduce the GUI configuration work if more than one Viewer has to be set up similarly.

1.1 Configuration via Configuration Viewer

The Configuration Viewer is the ideal tool on ADC QS to change or modify the configuration of the system.
It is explained in detail in the Configuration Viewer Software - User Manual, separately added in this chapter 3.2 .
Here we mainly focus on the Device configuration.



1.1.1 Configure Digitizer

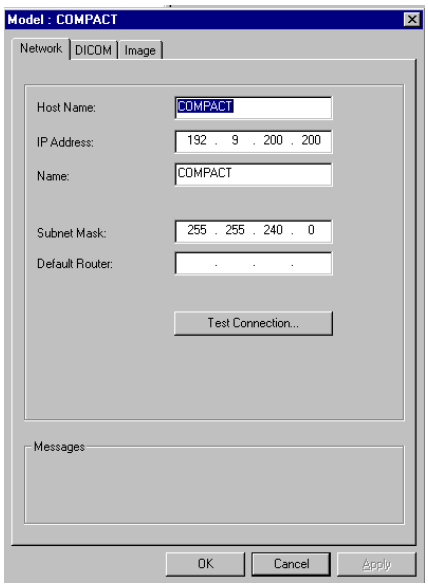
(1)To **Configure Digitizer** select at Configuration Viewer

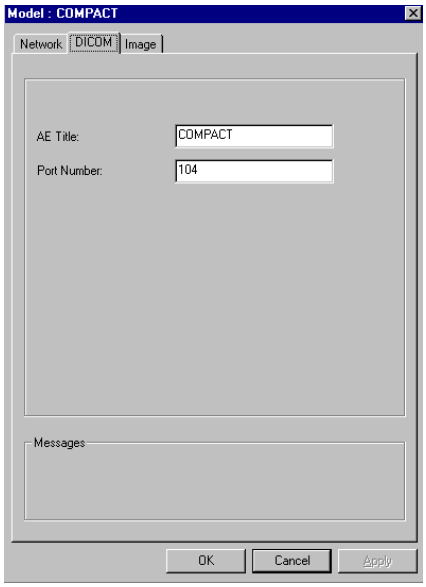
```
<Setup>
    <Devices>
        <Input Devices>
            <Digitizers>
```

(2) Double click on `<Add new digitizer>`

(3) Select digitizer model and click `<Next>`

(4) Enter network information at tab `Network` and AE Title at tab `DICOM`





at tab `Image` the image type can be looked up.

(5) Click <`Finish`> to save configured digitizer

To transfer the configuration information from the ADC QS to the digitizer at the end of the configuration session a Digitizer CPF-file (partial CPF-file) must be created and installed on the digitizer (see further explanation below, at 1.2.2 of this chapter).

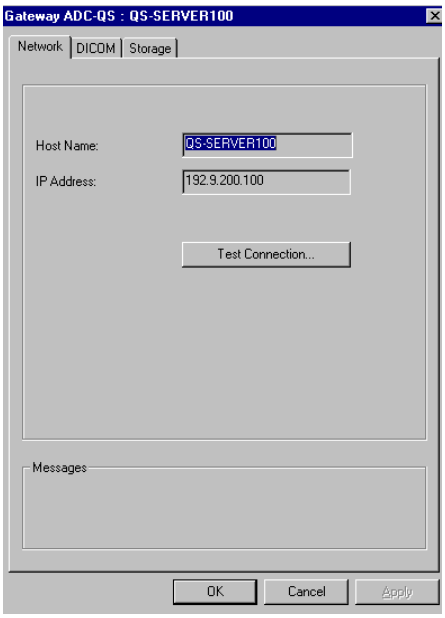
1.1.2 Configure Gateway

(1) To **Configure Gateway** select at Configuration Viewer

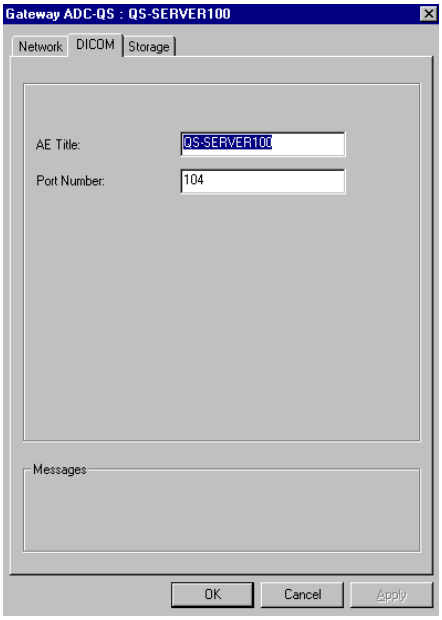
```
<Setup>
    <Devices>
        <ADC QS>
            <Server Hostname>
```

(2) Double click on host name of the Server e.g. `<QS_SERVER_10>`

(3) Check host name and IP-Address at tab `Network`. Network settings are taken over from “Windows NT Network Settings”. To test TCP/IP connection you can press `<Test Connection…>` button.



(4) Enter AE Title at tab `DICOM`.



At tab `Storage` the storage path can be looked up.

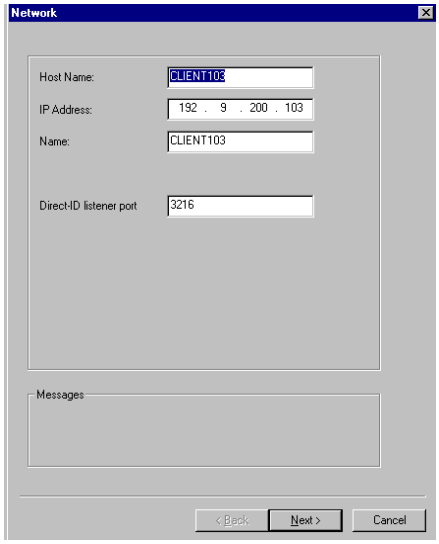
(5) Click <`OK`>

1.1.3 Configure ID-Viewer

(1) To **Configure ID-Viewer** select at Configuration Viewer
`<Setup>`
`<Devices>`
`<Identification Devices>`
`<ID Viewers>`

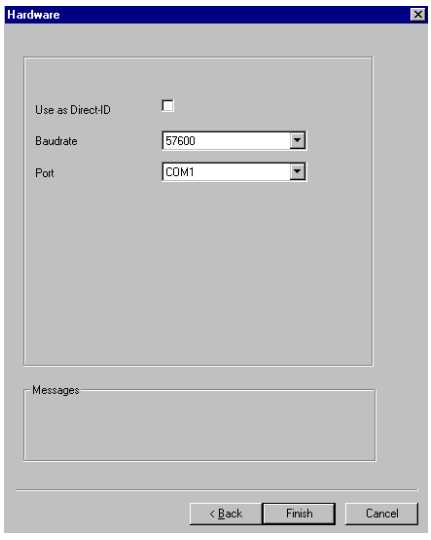
(2) Double click on `<Add new ID Viewer>`

(3) Enter host name in caps (key sensitive), IP-Address and name



(4) Click `<Next>`

(5) Check respectively uncheck “Use Direct_ID” check box and click `<Finish>`



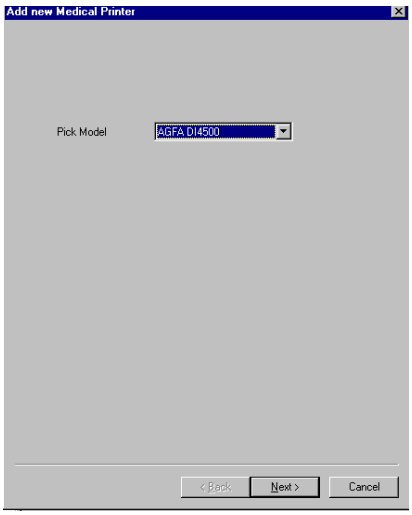
Select only one ID-Station in a cluster for DirectID. To communicate the ID-Viewer to run DirectID on ADC SOLO digitizer, a Digitizer CPF-File (partial CPF-file) has to be created and imported on the digitizer. In addition DirectID has also to be activated in the ADC SOLO digitizer to make it working.

1.1.4 Configure Medical Printers

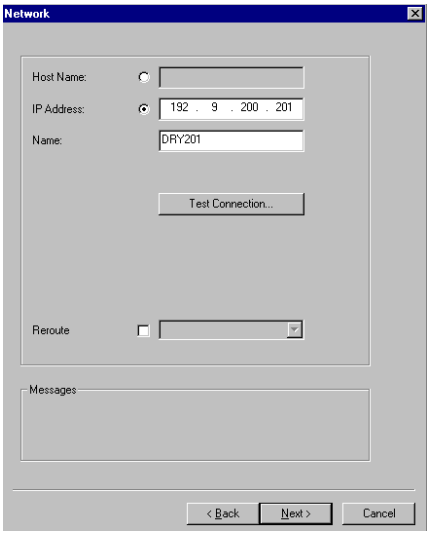
(1) To **Configure Medical Printers** select at Configuration Viewer
`<Setup>`
`<Devices>`
`<Medical Printers>`

(2) Double click on `<Add new medical printer>`

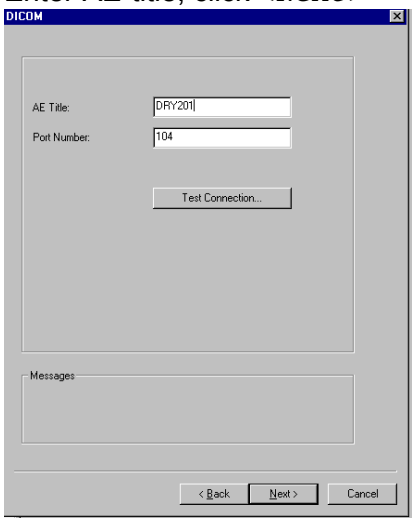
(3) Select printer model, click `<Next>`



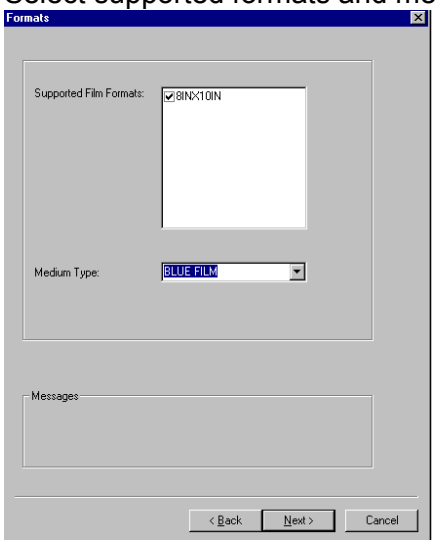
(4) Enter IP_address and name of printer, click `<Next>`



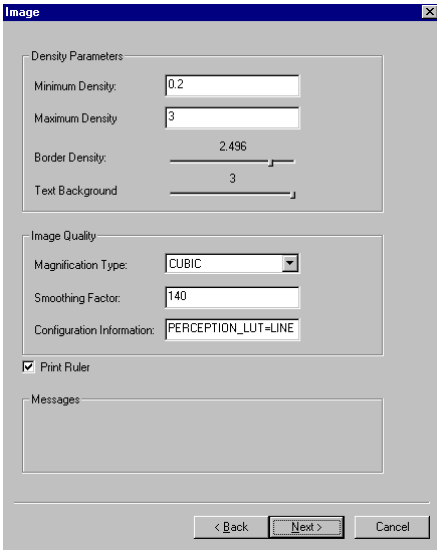
(5) Enter AE-title, click <Next>



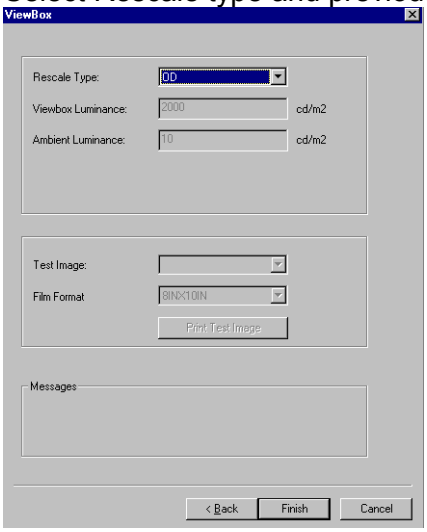
(6) Select supported formats and medium type, click <Next>



(7) Check resp. change density parameters and image quality settings, click <Next>



(8) Select Rescale type and previously checked film formats



(9) Click <Finish> to confirm medical printer configuration.

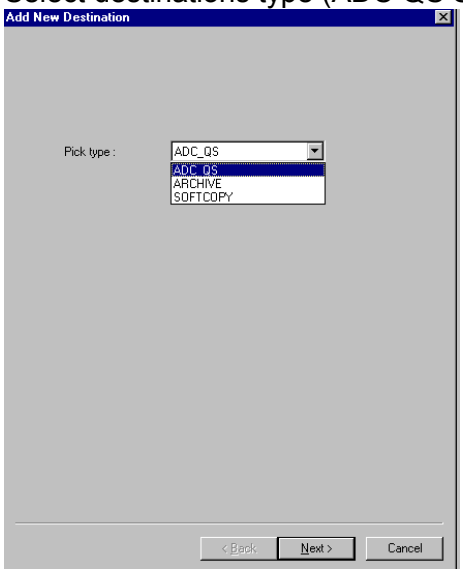
(10) On an ADCQS Client Station the printers have to be installed just as NT-Network Printers.

1.1.5 Configure Destinations

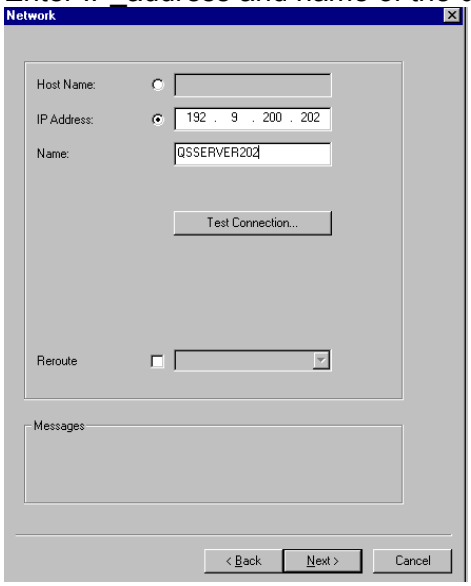
(1) To **Configure Destination** select at Configuration Viewer
<Setup>
<Devices>
<Destinations>

(2) Double click on <Add new destination>

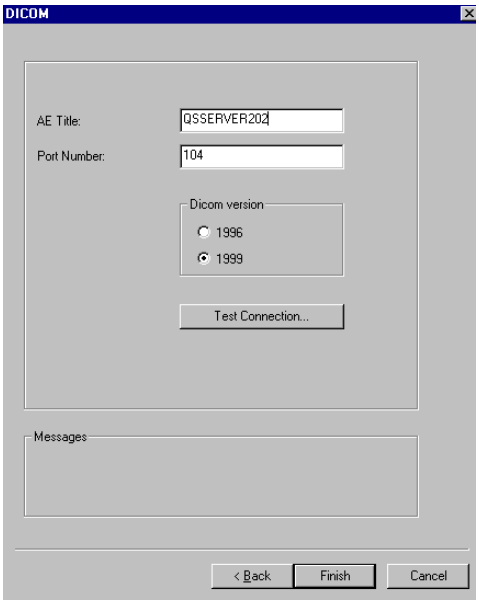
(3) Select destinations type (ADC QS Server, Archive or Softcopy)



(4) Enter IP_address and name of the destination

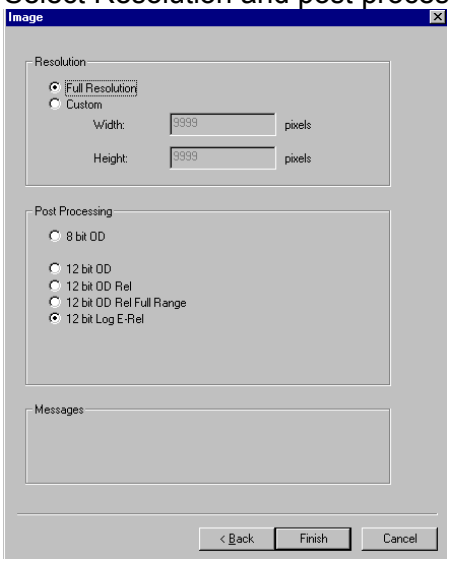


(5) Enter AE-title and select DICOM version

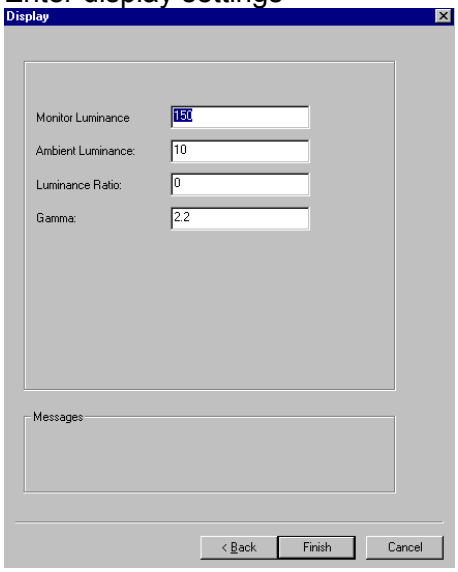


(6) Click `<Finish>` for Server as new destination, for Archive and Softcopy one dialog more will appear.

Archive:
Select Resolution and post processing



Softcopy:
Enter display settings



1.2 Configuration via CPF-File

In conjunction with ADC QS we distinguish between two different CPF-files:

- The CPF-file created by means of CCM-Tool.
- The Digitizer CPF-File or also called partial CPF-File.

1.2.1 CPF-File created by CCM

This is the file which is used to configure VIPS, PRID and the CR-Digitizers. This file can be used as a good basis to get started after initial setup of an ADC QS Cluster. To configure ADC QS with the CCM created CPF-file proceed as follows:

(1) Carry out Configuration work with CCM tool.
Please note that the hostname for an ADC QS Server has to be entered in **capital letters** (the simplest is here to use the same term for hostname, station name and DICOM_AE title).

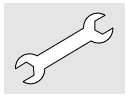
(2) Save CPF-file on floppy

(3) Startup Configuration Viewer on ADC QS Server

(4) Enter floppy and Select “File-→ Import CPF”

(5) At the end of the import you maybe asked to synchronize printers. Just select a printer and press “Install”. Repeat this until all printers are installed.

(6) Reset ADC QS



ADC QS supports IP_address resolution via DNS (or Netbui). However most of the other AGFA devices (digitizers, printers, etc.) do not support this resolution method.

During importing a CPF-file the ADC QS reads the IP_addresses of that different device in the CPF-file and tries to resolve the corresponding hostname via DNS (or Netbui). If it is successful finding a corresponding hostname, it will fill it in into the "Hostname" field.
If it is not successful, it will fill in the IP_address into the "Hostname" field.
The next time you export Digitizer CPF-file (partial CPF-file) you will have the IP_address filled in for hostname **and** IP_address.

Therefore it is advised after importing a CPF-file created by CCM to select Setup → Devices → Input Devices → Digitizer. There you select the `Network` tab and change the hostname field (containing the IP_address) into the actual hostname of the digitizer.

Please note that importing a CPF-file on the ADC QS Server deletes all configuration information setup before. That is:

- The whole device configuration
- The whole examination configuration
- The whole image processing configuration
- The whole dose monitoring statistics

Therefore we recommend to use the CPF-file import only for the initial startup.

1.2.2 Digitizer CPF-File (also called partial CPF-File)

The need for a Digitizer CPF-file came up together with ADC QS.2.1. The reason why we need that file is because in a pure ADC QS environment the Configuration Viewer is used to configure ADC QS. However the CR-Digitizers still need a CPF-file to be configured.
ADC QS produces that file itself. It must **only be used** for Digitizers, as it contains only part of the information a CCM created CPF-file contains.
To create a Digitizer CPF-File you have to perform the following steps:

(1) Carry out Configuration work with Configuration Viewer

(2) Put floppy to floppy drive of ADC QS station

(3) Select at Configuration Viewer
`<File>`
`<Export AGFA DICOM Digitizer CPF>`

(4) Click `<Export CPF>` to browse folder A:\ to save CPF-file on floppy

(5) Install the CPF-file from floppy in the digitizer

1.3 Configuration of mixed environments

ADC QS.2.1 can also be installed in mixed environments with PRID and VIPS. For the initial setup the same CPF-file, created by the CCM-Tool can be used.

If this file is imported into ADC QS you will find in the Configuration Viewer under Setup → Devices → Destination also the VIPS stations as possible destinations. This destinations must be deleted as they are not able to receive data from an ADC QS.

For later configuration changes it is advised to use Configuration Viewer for ADC QS and CCM-Tool for VIPS and PRID related changes. This may require also manual adaptation between the different configuration methods.

1.4 Configuration Cloning

Depending what is to be done two procedure to clone ADC QS devices maybe applied. They also can be used in combination.

1.4.1 Cloning an ADC-QS Server

This is normally done when configuration from one Server should be transferred to another Server, i. e. into another cluster. Here only the configuration data kept in the database is transferred. The procedure is as follows:

(1) Start Configuration Viewer on Source Server*

(2) Select
`<File>`
`<Export Configuration to xml-file>`
This may take some minutes depending on the size of the configuration.

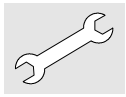
(3) Stop ADC QS application on Target Server

(4) Start Configuration Viewer on Target Server

(5) Select
`<File>`
`<Import Configuration from xml-file>`
This may take some minutes depending on the size of the configuration; app. 5 min per 0.5Mb size of xml-file.

(6) Check Gateway configuration in Configuration Viewer and adapt if necessary to the requirements on the Target Server
(Setup → Devices → ADCQS → <Server name>). Parameters to be adapted maybe hostname, IP_address and DICOM AE_title

(7) Select
`<Setup>`
`<Devices>`
`<Destinations>`
and delete the Target Server from the list of possible destinations (to avoid sending to itself)



(8) Select
```
<Setup>
 <Devices>
      <Destinations>
```
and add the Source Server to the destination list, if it is requested to send studies to the source ADC QS

*In the above text the Source Server is always the Server which provides the configuration to be duplicated, while the Target Server is the one to receive this configuration.

1.4.2 Cloning User Settings of Viewers (for ADC QS Server and Client)

The cloning of Viewers retrieves configuration information from the system which comprises of user settings, registry entries for GUI configuration, textbox definitions, etc. This allows to transfer GUI configuration from one Viewer to others (either in the same or in another cluster). Thus a lot of time can be saved as work does not have to be done double.

There is one restriction of this procedure for the time being, that only the configuration for the “empty” user can be transferred (i.e. no login name and password are used to login on application level).
The procedure is as follows:

(1) Each Viewer which is activated on a Source System should be at least started once before you start the cloning, as some files and registry settings are only created after the first start-up of a Viewer.

(2) Stop ADC QS

(3) Insert an empty floppy into the floppy drive of the Source System with the Viewer to be cloned.

(4) Select at NT-Start Menu
```
<AGFA>
   <ADC-QS>
      <Tools>
           <ExportUserSettings>
```
This program copies all the above mentioned information to a floppy.

(5) If you have other application users set up as the “empty” user you have to copy the files <username>.cpx from the C:\temp\cpf directory manually to the floppy.

(6) Insert the floppy into the floppy drive of the Target System where the Viewer should be imported to.

(7) Select at NT-Start Menu
```
<AGFA>
 <ADC-QS>
      <Tools>
           <ImportUserSettings>
```
The old GUI configuration information will be overwritten.

(8) If you have other application users set up as the “empty” user you have to copy the files <username>.cpx from the floppy to the directory C:\temp\cpf of the Target System where the Viewer is imported.

(9) After resetting the system the Viewer of the Target System has the same GUI settings as the Viewer of the Source System.

This procedure can be used both on ADC-QS Server and Client for cloning Viewer settings.

2 License Management

For ADCQS from a commercial point of view it is distinguished between software options which require Server or Client license:

Software - Options	License for each Server PC	License for each Client PC
ADC Online-Processing Software (Win)	X	
ADC IPD-Viewer Software (Win)		X
ADC Black Border Software (Win)	X	
ADC Smart Print Software (Win)		X
ADC Autorouting Software (Win)	X	
ADC Pediatric Software (Win)	X	
ADC Uro/Tomo Software (Win)	X	
ADC Dental Software (Win)	X	
ADC DICOM-Store (Win)	X	
ADC Multi Format Import/Export (Win)	X	
ADC Annotation Software (Win)		X
ADC QC-Viewer Software (Win)		X
ADC ID Software (for Win appl.)		X
ADC Full leg/spine Software (Win)		X
ADC Rislink Toolkit Software (for Win appl.)	X	
ADC Dose-Monitoring Software (Win)	X	
ADC Auto QC Software (Win)	X	

A Server License has to be acquired once for an ADC QS cluster, while a Client License has to acquired for each PC it should run on. Therefore the following has to be regarded when adding a new license:

- A Server License has to be activated on each PC in the cluster. The same license_ID can be used throughout the cluster.
- A Client License must only be activated on the PC(s) the SW-Option is bought for. For each PC a different license_ID must be used.

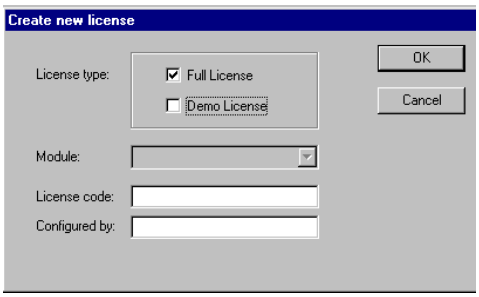
2.1 Adding Licenses

(1) To **activate a licensed SW-Option** select at Configuration Viewer
`<Monitoring>`
`<Software Management>`
`< License Management >`

(2) Double click on `<Add license>`

.

(3) The following window pops up. Select license type („Full License“ or „Demo License “).



(4) If you select “Demo License“ a list of not yet activated SW-Options appears at “Module“. A “Demo License“ expires after 90 days (without previous warning).

(5) If you select „Full License“ enter „License Code“ and your name. The SW-Option is identified and activated by means of the license code.

(6) Click `<OK>` to finish.

3 Creation of an ADC QS Restore CD

3.1 General

The creation of a bootable Restore CD-ROM onsite makes it possible to restore the server system at a later date back to the same identical state as it was by creation time of the CD. Please pay attention to the following points:

- The CD must only be used on the PC where it was created!
- During the process the CD tray can open and close automatically; this is then part of the procedure.

Together with ADC QS 2.1.xx the Restore Toolkit version 2.5 is introduced. It provides the following new features compared with version 2.4:

- Client Restore CDs can be created as well (if CD-Writer available)
- Norton Ghost 7.5 makes it possible to directly write to the CD Writer. This saves some time. However only **high quality CD-R should be** used. Cheap ones are very error prone (esp. on Clients).
- Restore Toolkit fits on a floppy now.
- Restore CDs are date and time stamped, labeled with system type information and which disk image is included.
- The system event logs are also included in the system disk image.
- Disk spanning is possible now (i.e. if the disk image does not fit on one CD, it can be continued on a second one).

3.2 Requirements

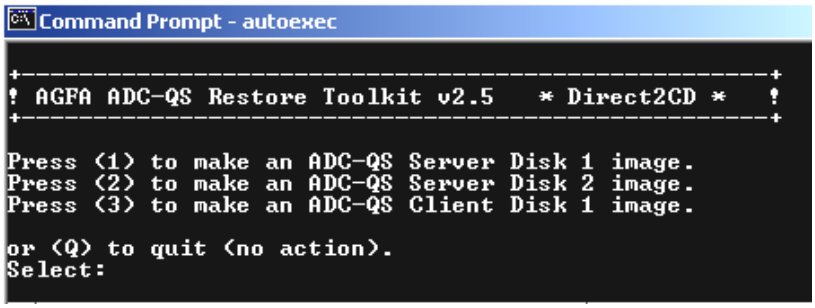
- ADC-QS Restore Toolkit version 2.5 or higher
- Blank or re-writeable CD (use high quality CD-Rs only)
- ADC-QS System (Server or Client) with built in CD Re-Writer

3.3 Procedure

(1) Insert the ADC QS Restore Toolkit floppy in the floppy drive.

(2) Stop ADC QS and empty the desktop Recycle bin.

(3) Re-start the system, which will boot now from floppy drive. The following menu is shown:

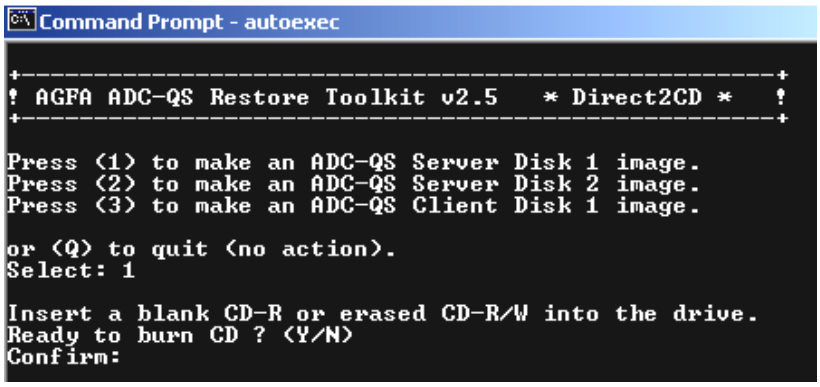

Command Prompt - autoexec
+---+
! AGFA ADC-QS Restore Toolkit v2.5 * Direct2CD * !
+---+
Press (1) to make an ADC-QS Server Disk 1 image.
Press (2) to make an ADC-QS Server Disk 2 image.
Press (3) to make an ADC-QS Client Disk 1 image.
or (Q) to quit (no action).
Select:

Make selection according to system type:

For ADC-QS Server normally only Disk 1 needs to be restored.
For ADC-QS Client only Disk 1 exists.

(4) CD tray opens. Insert blank CD or clean re-writeable CD

(5) The following menu is shown


Command Prompt - autoexec
+---+
! AGFA ADC-QS Restore Toolkit v2.5 * Direct2CD * !
+---+
Press (1) to make an ADC-QS Server Disk 1 image.
Press (2) to make an ADC-QS Server Disk 2 image.
Press (3) to make an ADC-QS Client Disk 1 image.
or (Q) to quit (no action).
Select: 1
Insert a blank CD-R or erased CD-R/W into the drive.
Ready to burn CD ? (Y/N)
Confirm:

Enter `<Y>`

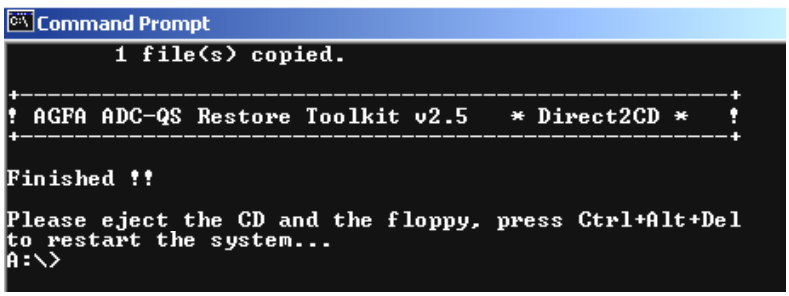
(6) If CD tray is not already closed, it will be closed automatically now.

(7) Norton Ghost Software starts automatically. It reads first boot data from floppy and starts afterwards to burn the Restore CD of the selected Disk. No action required – takes about 12 minutes.

(8) CD tray opens automatically, when process is finished.

If the system image does not fit on a single CD, message "`Insert next media and press enter to continue…`" appears. Insert a new blank CD or clean re-writeable CD and press enter.

(9) The following window is shown:



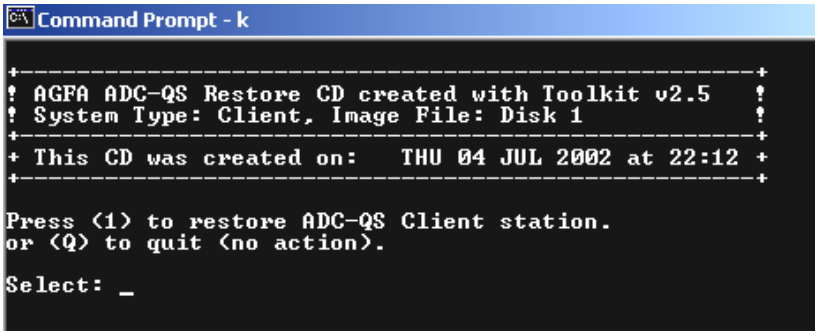
Follow the instructions to eject the new created Restore CD and the floppy and restart the system by pressing Ctrl+Alt+Del

(10) Write on the new created Restore CD:
- "ADC-QS Server Restore CD"
- Date of creation
- Software version
- Creator of the CD

3.3.1 Testing the recorded Restore CD

(11) Insert the Restore CD and restart the system

(12) The following window appears (example shows Restore CD of a client system):


Command Prompt - k
+--+
! AGFA ADC-QS Restore CD created with Toolkit v2.5 !
! System Type: Client, Image File: Disk 1 !
+--+
+ This CD was created on: THU 04 JUL 2002 at 22:12 +
+--+
Press (1) to restore ADC-QS Client station.
or (Q) to quit (no action).
Select: _

Check that the image type matches your system.

Type in <q>
(For testing it is not necessary to carry out a restore procedure)

If the window does not appear, first check the boot sequence before creating a new Restore CD.

The CD label must contain the following data:

Restore-CD for ADC-QS.2.1.xx (Server)	
Hostname:	*<hostname>*
IP-Address:	*<ip_address>*
Created by:	*<Name, First Name>*
Why created:	*<reason (e.g. upgrade)>*
Creation Date:	*<DD:MMMM:YYYY>*

3.4 Restore Toolkit Version 2.5 – Potential Errors and Solutions

Most errors take place during the writing of the Ghost image, in this case an error code is given together with a short explanation. In all cases, if an error occurs, additional information is found in the file **c:\temp\ghosterr.txt**.

a) *ABORT: 440, Ghost cannot run on Windows NT based systems (NT/2K/XP).*
You are attempting to use the Restore Toolkit floppy or created Restore CD from within a Windows session.
Restart the system with the Toolkit floppy or Restore CD inserted.

b) *ABORT: 52102, CD-R disc is not writeable. Insert blank media.*
Ghost can only write to clean media (no multi-session possible)
Insert a new blank CD-R or an erased CD Rewritable.

c) *Critical Error 0x0C Sharing Violation, Abort or Retry ?*
This is a non-standard error that will normally only be seen when you are doing some custom steps with the Ghost program. The following are known situations:

i) The ghost image was made with a later version of Ghost (eg. 7.5) and you are trying to read it with an older version (eg. 6.01). Note: the other way around is OK (older .GHO files are read OK by 7.5)
Use Ghost v7.5 or later.

ii) The source and destination disk are the same.
Write directly to the CD Writer.

d) *ABORT:10027, Unknown image format: code 51: later Ghost version required.*
Same as **c) i)** above.

e) *ABORT: 18190, No such file or directory (ENOENT) when opening A:\SKIPLIST.TXT*
Can not find a file referenced during the Ghost image creation process.
Leave the Restore Toolkit floppy in the drive, until everything is complete.

f) *Write protect error writing drive A (Abort, Retry, Fail?)*
The write protect tab prevents the toolkit from writing some temporary files on the floppy.
Flip the protection tab back to the write enabled position.

4 Agfa DICOM bridge

See appended document **AGFA DICOM Bridge Version 2.0 (User Guide)**

5 ID-Viewer GUI and DICOM Modality Worklist GUI

The configuration of the ID-Viewer GUI and DICOM Modality Worklist GUI is mainly described in the ID-Viewer User Manual.
The GUI of the ID-Viewer and the DICOM Modality Worklist can be configured in the field only by predefined GUI templates. Screenshots of these GUI templates can be found in chapter 11, Installation Planning. Other changes are not foreseen in the field. If the currently provided templates should not be accepted by the customer, inform your Global Support Center. There, a headquarter decision will be initiated if and when a change will be provided.

6 RIS Link

The configuration of the RIS Link is described in the RIS Link Toolkit User Manual (enclosed in the ADC QS RIS-Link Toolkit option). It gives the information how the data provided by the RIS should look like in respect to format, structure and DICOM mapping. The data the hospital RIS system delivers, have to match to these definitions. Changes on ADC QS side are not foreseen. To avoid delays during set-up it is absolutely necessary that the customer is aware well in advance what his HIS/RIS system has to deliver.
If the customer's HIS/RIS system is not able to fulfill these requests, GSC has to be involved right from the beginning. The goal is to have for these sites before the actual set-up of the ADC QS starts a response from AGFA whether these adaptation requests can be fulfilled or not.

Please note that the ADC QS RIS-Link Toolkit does not support anymore data retrieval from RIS/HIS systems by means of a DOS executable file. Only a Windows executable can be used. For supported connection modes refer to ADC QS RIS-Link Toolkit user manual.

7 WebAdmin

The following list gives an overview of the WebAdmin Menu Structure

1st level	2nd level	Comment	3rd level	Comment	4th level	Comment
Show Info	**Network Info**	shows network configuration info of the server				
	Self Test Report	checks connection to connected devices (TCP/IP, DICOM); see example following page.				
	Storage Check Report	delivers a report about storage statistics; see example following page				
Export	**Event Log Files**	view/download logfiles				
	CPF File	view/download cpf-file				
	Compas Backup	download latest Backup				
	Image File	view/download images/studies				
Setup	**Study settings**	shows study/exam tree				
	Devices		**BO Server**	view server settings		
			Printers	view, modify, add, delete ,test Printer connections		
			Digitizers	view, modify, add, delete, test Digitizer connections		
			Destinations	view, modify, add, delete, test Destination connections		
			Gateway	view Gateway settings		
	Specialised		**Printers**	synchronise printers		
			Digitizers	export partial cpf-file for Digitizer		
			DICOM Bridge	download/view adb config files		
	Site information		**Administration**	view/edit site data screen		
			CR Settings	view exposure class list, Dicom Body part list		
Monitoring	**License management**	view, switch on/off licenses				
	Task Manager	view Task Manager settings				
	Quality monitoring		**Qc Tools**		**Contrast**	view Contrast QC Phantom results
					Spatial	view Spatial QC Phantom results
			Dose Monitoring	view Dose Monitoring Statistics		
			BO Explorer	view configuration tree – do not use it for changing !		
Documentation	**Error Messages**	shows QS error messages				

Example of an ADC QS Self Test Report

ADC-QS Configuration Self Test Report

(Fri Aug 9 15:21:05 UTC+0200 2002)

Business Object Server

Host name	QS-SERVER10
Resolved IP address	192.9.200.50

Storage

Path	H:/data\
Access	Ok
Used space	629 Mb
Free space	6455 Mb
Images stored	130
Images free	1379
Water Level	9 (Level 1 = 80%; Level 2 = 90%;)

Printers

Name	DRY202
Host name	192.9.200.202
Protocol type	DICOM
Port number	104
AE Title	DRY202
Resolved IP address	192.9.200.202
Ping result:	Ping timeout
DICOM CEcho result:	

Digitizers

Name	SOLO201
Host name	SOLO201
Port number	104
AE Title	SOLO201
Resolved IP address	-
Ping result:	Unable to resolve hostname

DICOM SCP-Destinations

Name	SERVER102
Host name	192.9.200.102
Port number	104
AE Title	QS-SERVER102
Resolved IP address	192.9.200.102
Ping result:	Ok
DICOM CEcho result:	

Name	IMPAXCS500
Host name	192.9.200.204
Port number	104
AE Title	IMPAXCS500
Resolved IP address	192.9.200.204
Ping result:	Ping timeout
DICOM CEcho result:	

Gateway

Example of an ADC QS Storage Check Report

\\Show Info\Storage Check Report

ADC-QS Storage Check Report

(Tue Jun 11 11:38:25 UTC+0200 2002)

Exception occured while generating system information:BOF::QueryAttributes (BOF.cpp) (339) CCImplOra8Database::queryAttributes CCImplOra8Database::execute CCSelectStatement::getSQL : CCImplRelStatement::CCImplOra8Statement::getAttributes 3 : Attribute is not found in the ODBC metadata: HostName interface: ICfgBOServer

General information

Processes list

Image Name	PID	CPU Time	Mem Usage	Mem Peak Usage	Treads
System Idle Process	0	03:36:46	16Kb	16Kb	1
System	2	00:00:14	216Kb	584Kb	40
smss.exe	32	00:00:00	396Kb	1,632Kb	6
csrss.exe	42	00:00:00	1,728Kb	1,736Kb	6
winlogon.exe	36	00:00:00	336Kb	2,968Kb	3
services.exe	54	00:00:00	3,344Kb	3,356Kb	21
lsass.exe	57	00:00:01	3,008Kb	3,016Kb	13
spoolss.exe	81	00:00:00	12,240Kb	12,676Kb	17
RpcSs.exe	92	00:00:00	1,840Kb	2,292Kb	10
nddeagnt.exe	101	00:00:00	1,332Kb	1,332Kb	1
Explorer.EXE	109	00:00:05	6,072Kb	6,320Kb	5
msdtc.exe	118	00:00:00	3,656Kb	3,704Kb	16
MGAQDESK.EXE	124	00:00:00	1,784Kb	1,784Kb	1
CreateCD.exe	128	00:00:00	7,472Kb	7,472Kb	4
ADCQSMonitor.ex	131	00:00:00	3,792Kb	3,792Kb	5
Awhost32.exe	135	00:00:00	1,740Kb	4,592Kb	12
cisvc.exe	162	00:00:00	5,536Kb	5,600Kb	9
llssrv.exe	172	00:00:00	2,004Kb	2,012Kb	9
mgasc.exe	175	00:00:00	1,012Kb	1,020Kb	1
mgactrl.exe	179	00:00:00	1,452Kb	1,452Kb	1
ORACLE80.EXE	189	00:00:01	20,552Kb	20,552Kb	12
pstores.exe	207	00:00:00	836Kb	2,016Kb	5
MSTask.exe	211	00:00:02	3,392Kb	3,688Kb	7
STRTDB80.EXE	220	00:00:00	1,504Kb	1,544Kb	1
inetinfo.exe	223	00:00:08	6,632Kb	6,640Kb	31
cidaemon.exe	264	00:00:00	3,488Kb	3,488Kb	1
tmbrowsr.exe	222	00:00:00	2,420Kb	2,420Kb	2
GW2_R.exe	126	00:00:02	16,216Kb	17,056Kb	13
CRViewer.exe	271	00:00:00	1,532Kb	5,860Kb	3
CompasServer.ex	275	00:00:07	15,940Kb	15,984Kb	8
tmservrr.exe	281	00:00:00	4,112Kb	4,116Kb	4
tmcontxr.exe	96	00:00:00	1,996Kb	1,996Kb	4
CompasMsgMgr.ex	296	00:00:00	2,972Kb	3,024Kb	4
CompasLogger.ex	313	00:00:00	3,296Kb	3,316Kb	4
Selector.exe	303	00:00:00	9,108Kb	10,216Kb	5
ddhelp.exe	328	00:00:00	1,484Kb	1,484Kb	3
mtx.exe	121	00:00:00	7,556Kb	7,556Kb	21
mtx.exe	356	00:00:00	4,516Kb	4,524Kb	13
MDM.EXE	385	00:00:00	2,072Kb	2,080Kb	4
IEXPLORE.EXE	72	00:00:00	5,404Kb	10,744Kb	8
mtx.exe	95	00:00:00	9,040Kb	9,040Kb	11

Oracle Tablespace Information

Name	Filename	MaxSize	Free	Used	Status
USER_DATA	F:\ORANT\DATABASE\USR1ORCL.ORA	150 Mb	147 Mb	3 Mb	AVAILABLE
ROLLBACK_DATA	F:\ORANT\DATABASE\RBS1ORCL.ORA	150 Mb	140 Mb	10 Mb	AVAILABLE
TEMPORARY_DATA	F:\ORANT\DATABASE\TMP1ORCL.ORA	150 Mb	148 Mb	2 Mb	AVAILABLE
SYSTEM	F:\ORANT\DATABASE\SYS1ORCL.ORA	200 Mb	140 Mb	60 Mb	AVAILABLE
COMPAS_DATA	COMPAS1ORCL.ORA	8,192 Mb	8,182 Mb	10 Mb	AVAILABLE

Registered Database Entries

Patients	27
Procedures	29
CR Procedure Steps	15
CR Series	15
CR Images	15

Consistency information (Orphaned entries)

Patient Last Name	Patient First Name	Patient ID	Study Date	Pixel Data Path
Matare	Christina	304054	8/17/00	H:/data/pixel_FD57A741-D0CF-466d-BB35-6F74F596CFFA
Brunner	Wilhelmine	304040	8/16/00	H:/data/pixel_7B870851-BC35-426b-8082-021EAE8726BC
Schoenberger	Ursula	304033	8/16/00	H:/data/pixel_210DAE2B-6BE1-457d-8BAC-C1E0360D5E68
Stuckenberger	Johann	304028	8/16/00	H:/data/pixel_3EA308ED-C1DE-41f4-92F8-A2852515BB1D
Blechinger	Karolina	304047	8/16/00	H:/data/pixel_20FD12BB-C4D2-40d0-95BC-8725BFF8A2D0
Laube	Valentin	304045	8/16/00	H:/data/pixel_1112E959-B75E-4ad7-913B-072D2382AA3E
Petzka	Arno	304229	8/25/00	H:/data/pixel_6F6B11F9-33C5-4e3d-AADC-50AFB923113A
Schmelzer	Hannele	304231	8/25/00	H:/data/pixel_E25847BC-3D05-4cf5-9ECA-65D936D90ED6
Franke	Elly	304060	8/17/00	H:/data/pixel_D37C012D-A81F-4d4d-8385-5C897F234D46
Winkler	Robert	304037	8/16/00	H:/data/pixel_35429FD0-B207-421c-BE93-748464C10722
Winkler	Robert	304037	8/16/00	H:/data/pixel_78864F9D-5E1F-420a-A9BF-C2CD067805EC

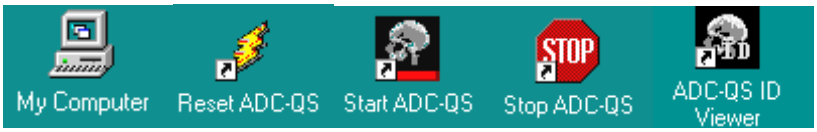
Data Storage Statistics

Path	H:/data\
Access	Ok
Annotation	4 (0 Mb)
Collimation	0 (0 Mb)
Pixel	0 (0 Mb)
PSO	0 (0 Mb)
Shutter	0 (0 Mb)
SSO	0 (0 Mb)
All	14 (13 Mb)
Total space	7083 Mb
Used space	185 Mb
Free space	6899 Mb
Images stored	0
Images free	Not enough data to calculate
Average weekly use	0 Mb
Water Level	3 (Level 1 = 80%; Level 2 = 90%;)

8 Setup of a Secure User (optional – only on Customer Request)

The “Secure User Script” allows to create a user which has very limited access to NT-Operating System. Almost all icons are removed from the desktop and additionally the NT-Start Menu is reduced to the absolute minimum.

Desktop includes only the following icons:



NT-Start Menu of the Secure User is reduced to
Agfa → ADC QS → ID Viewer, Reset ADC QS, Start ADC QS, Stop ADC QS
In addition the right mouse button is deactivated on the NT-Desktop and it prevents the user, logged in with “Secure User” account, to access the Configuration Viewer.

However the ”Secure User” does not have any restrictions on application level. The “Secure User” is able to delete images from the application or reject studies. The security is only provided on NT-Operating System and Configuration level.

The sequence of installation of the Secure User in relation to the printers is important.

- First configure all printers on Server (with “compas” account)
- Add Secure User account on Server
- Add same Secure User account on Client. During creation of the account the printer connections will be automatically setup as network printers.

If you want to add a printer later on you have to perform the following steps:

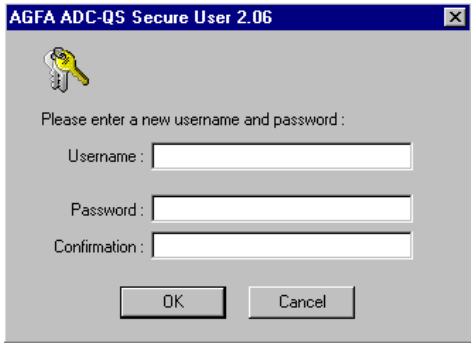
- Configure printer to be added on the Server (with “compas” account)
- Remove Secure User on the Client only
- Re-install Secure User on Client again. In this way the new printer is added to the Secure User account.

8.1 Add Secure User

Only one account for a Secure User has to be created. It has to be the same account on ADC QS Server and Client.

(1) Select

```
Start
  AGFA
    ADC-QS
      Tools
        Add Secure User
```



(2) Define Secure User with a corresponding password. Confirm the password by clicking <OK>

(3) System restarts two times. During this do not start any other application.

(4) Auto logon is switched off now. NT login window appears after every restart.

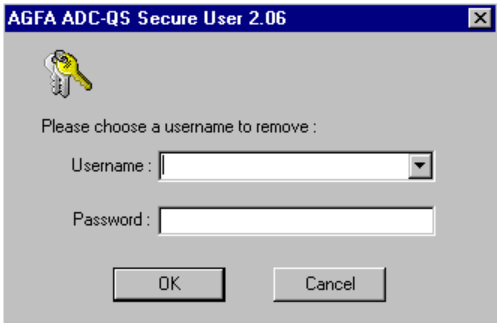
8.2 Remove Secure User

If you want to change the complete Secure User account it is best first to remove current Secure User and then add a new one. This has to be done both on Server and Client.
This procedure must also be applied on the Client only, if a printer should be added to the Secure User account (see above)

(1) Check that you are logged in as “compas"

(2) Select

```
Start
      AGFA
            ADC-QS
                  Tools
                        Remove Secure User
```



(3) Select Secure User, you would like to delete, from pull down menu and fill in corresponding password. Confirm the password by clicking <OK>

(4) System restarts two times. Always login as “compas" account. If the last Secure User has been deleted from the system, Auto Logon is activated again.

9 Installing ADC-QS into an Existing NT Domain

By default the systems delivered by AGFA are set up to operate in an unmanaged 'peer to peer' network pool called 'WORKGROUP'. This name 'WORKGROUP' is the same for all language versions of ADC-QS.

Further to this the ADC-QS Server and Client machines are set up with 2 local machine accounts:

Account	Password
administrator	(empty)
compas	compas98

Both these accounts are members of 'Administrator' group on the local machine. By default ADC-QS runs under the 'compas' account. The advantage of running ADC-QS as part of 'WORKGROUP' is that the administration tasks are much reduced – the downside to this is that there is almost no security in place.

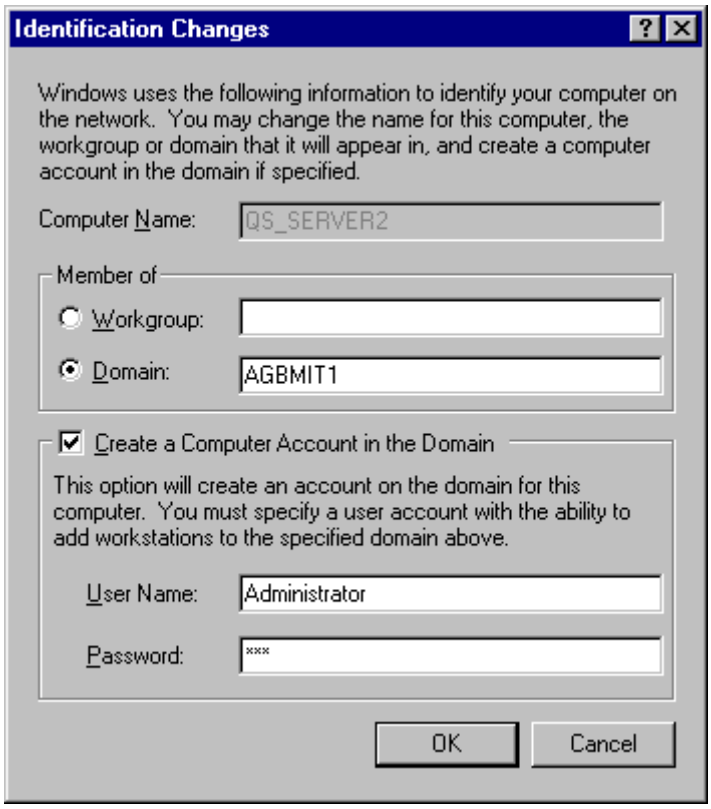
In many hospital environments ADC-QS will be used as part of a secure NT domain. To add new ADC-QS systems to the domain will require assistance from the local NT Domain Administrator (who has the passwords and authority required). Follow the sequence below to add an ADC-QS Server or Client into a domain:

9.1.1 ADC-QS System Name

Change the system name to the new name assigned by the domain administrator – Start Menu::Settings::Control Panel::Network::Identification, click on button 'Change', enter the new name, click <OK> . Click <OK> on confirmation dialog, click <Close> on the network control panel, dialog '… You must shut down and restart your computer… Restart now', click <Yes>. The system restarts.

9.1.2 Add ADC-QS System to Domain

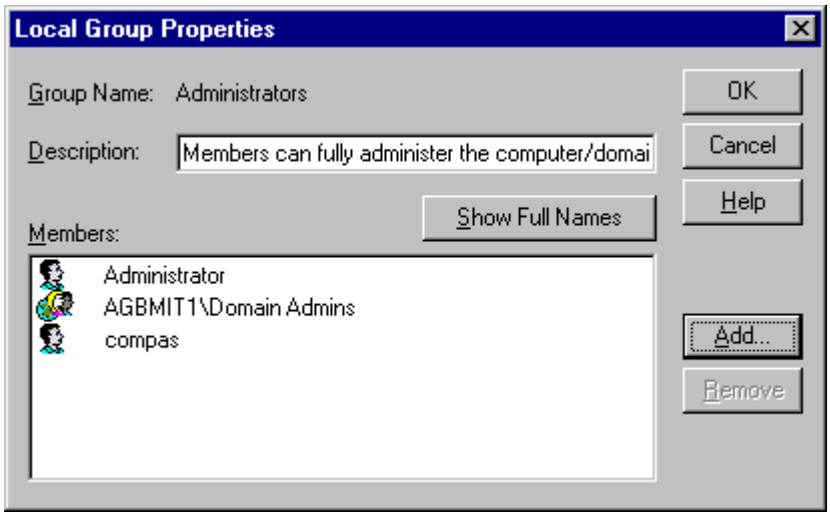
Log back in as local system *Administrator* (blank password). Hold down the shift key to defeat any auto-login. Once logged in, stop any ADC-QS auto-start (Server only). From Start Menu::Settings::Control Panel::Network::Identification, click on button 'Change', click on radio button 'Domain', enter the domain name. Select checkbox 'Create Computer Account in the Domain', enter the **Domain Administrator** name and password. Click <OK>.


Identification Changes
Windows uses the following information to identify your computer on the network. You may change the name for this computer, the workgroup or domain that it will appear in, and create a computer account in the domain if specified.
Computer Name:
QS_SERVER2
Member of
Workgroup:
Domain:
AGBMIT1
Create a Computer Account in the Domain
This option will create an account on the domain for this computer. You must specify a user account with the ability to add workstations to the specified domain above.
User Name:
Administrator
Password:
***
OK
Cancel

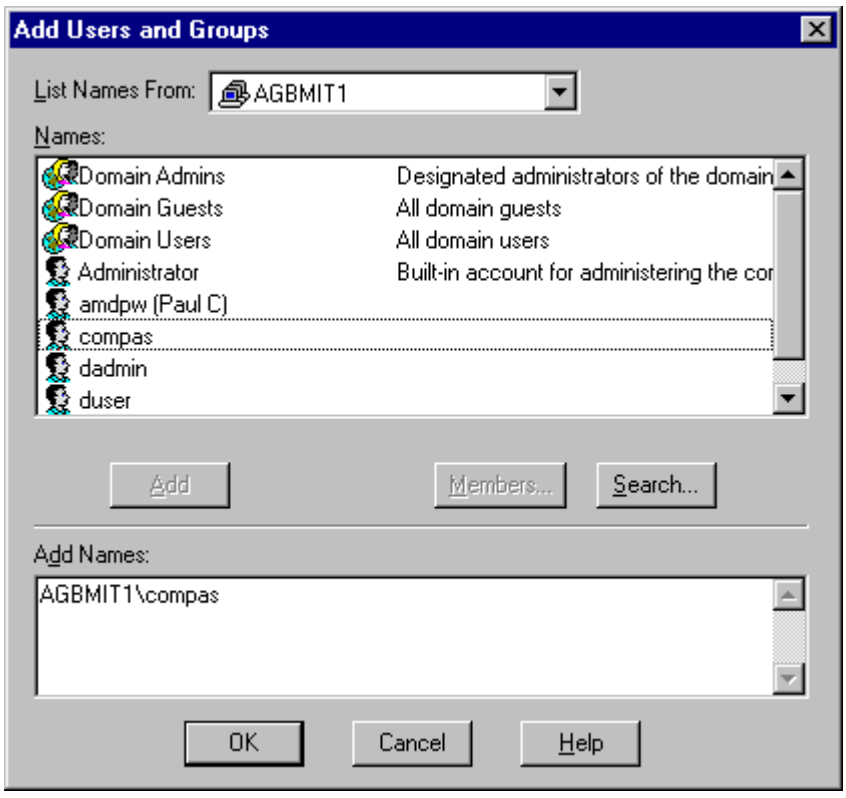
Upon success the message 'Welcome to <Domain Name>' will popup. Click <OK>, then <Close>, dialog '… You must shut down and restart your computer… Restart now', click <Yes>. The system restarts.

9.1.3 Adding Domain User to Local System

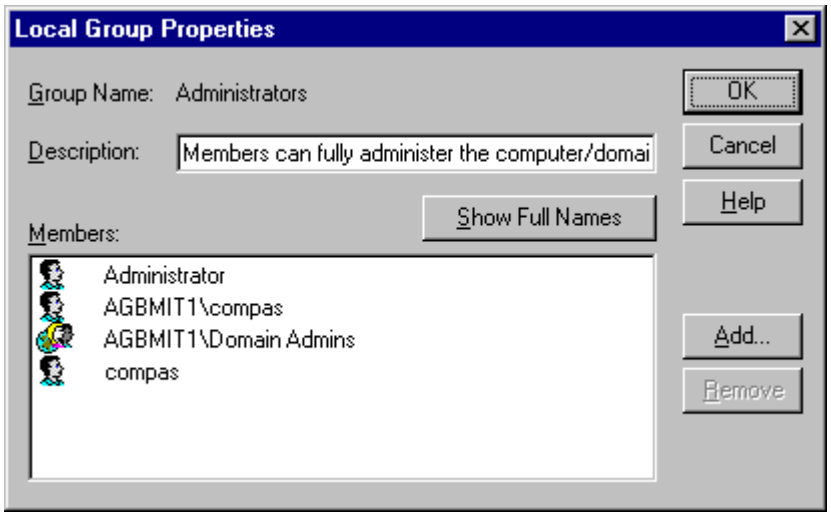
Log back in as local system *Administrator* (**not domain logon !**). Start again the 'User Manager for Domains', double click on 'Groups->Administrators' in the list at the bottom half of the screen.



Click now on ‘Add’, select ***compas*** from the Names list of the domain, click on <Add>, the domain compas account is added to the Add Names list:



Click then on <OK> to close this dialog. The ***domain name\compas*** account will show up in the Local Group Properties::Members list:



Click then on <OK> to close this dialog. Close the User Manager (Alt-F4, or menu User::Exit).

9.1.4 Logging onto the Domain

Log-off from the local system (‘Start Menu::Shut down::Close all programs and log-on as different user’) ,then re-logon **using the domain account** as shown below:

Once logged in, ADC-QS is now available for use.

9.1.5 Notes:

a) The auto-login and auto-shutdown feature of ADC-QS Server is still working under domain log-in. To bypass the auto-login, hold down the *Shift* key during the login phase.

b) The domain administrator will normally carry out sections Create Compas account and Adding Domain User to Local System for you. In this way you do not have to make a request for the domain administrator account and passwords.

c) Procedures for setting up printers and other devices from the ADC-QS Server remain the same under domain login.

10 Virus Scanner Software

In the following the tested settings with McAfee virus scanners together with ADC QS 2.1 are listed.

10.1 Settings to be changed

Internal tests were performed with the following sdat file versions for McAfee Netshield v4.5 for Server w/Service Pack 1 (SP1), Netshield v4.5 for Client w/SP1, and McAfeeVirus Scan NT v5.1 on ADC QS 2.1:

	Netshield v4.5 w/SP1	Virus Scan NT v5.1
Server	**sdat4167.exe** (scan engine 4.1.50 and virus definition 4.0.4167) **sdat4184.exe** (scan engine 4.1.60 and virus definition 4.0.4184)	- can not be installed on server -
Client	**sdat4167.exe** (scan engine 4.1.50 and virus definition 4.0.4167)	**sdat4184.exe** (scan engine 4.1.60 and virus definition 4.0.4184)

Netshield v4.5 w/SP1 for Server and Netshield v4.5 w/SP1 for Client are two separate software packages.

If a virus scanner is supposed to be installed on an ADC QS 2.1, AGFA recommends to use the above mentioned versions of McAfee virus scanners with the below mentioned settings.
This configuration did not show a noticeable impact on ADC QS 2.1 in our test environment. For any other configuration or virus scan software AGFA cannot make a statement and it may have impact on the proper operating of ADC QS 2.1.

10.1.1 Settings deviating from default

The following settings have to be changed from default to the shown status when installing McAfee on ADC QS 2.1:

10.1.1.1 NetShield v4.5 for Server w/SP1

Changes to settings are tested for sdat4167.exe and sdat4184.exe.

DETECTION TAB	***Scan Section***	
	Outbound files	UNCHECKED
	Files to Scan Section	
	Selected file types and for known macro viruses in all files	UNCHECKED
	Selected File Types Only	CHECKED

ACTIONS TAB	***Response to User Section***	
	Send messages to users	CHECKED
REPORTS TAB	***Log File Section***	
	Limit size of log to [100KB]	CHECKED

10.1.1.2 NetShield v4.5 for Client w/SP1

Changes to settings are tested for sdat4167.exe.

DETECTION TAB	***Scan Section***	
	Outbound Files	UNCHECKED
	Advanced Section	
	Enabled heuristics scanning	CHECKED
	Enable macro heuristics scanning	CHECKED
REPORT TAB	***What to Log Section***	
	Session Settings	UNCHECKED
EXCLUSIONS TAB	***Item***	
	\Recycled	REMOVE

10.1.1.3 Virus Scan NT v5.1 for Client

Virus Scan NT v5.1 can only be installed on NT-workstation operating system.
Changes to settings are tested for sdat4184.exe.

DETECTION TAB	*Scan Section*	
	Outbound Files	UNCHECKED
	Advanced Section	
	Enabled heuristics scanning	CHECKED
	Enable macro heuristics scanning	CHECKED

10.2 Overview of all Settings

10.2.1 NetShield v4.5 for Server w/SP1

Scan Engine Version: 4.1.60
Virus Definition Version: 4.0.4184
sdat file: sdat4184.exe

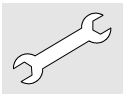
DETECTION TAB	***Scan Section***	
	Inbound files	CHECKED
	Outbound files	UNCHECKED
	Network Drives	UNCHECKED
	Boot Sector(s)	CHECKED
	Floppy during shutdown	CHECKED
	Files to Scan Section	
	All files	UNCHECKED
	Selected file types and for known macro viruses in all files	UNCHECKED
	Selected File Types Only	CHECKED
	File Types	DEFAULT SETTINGS
ADVANCED TAB	***Heuristics Section***	
	Find unknown program viruses	UNCHECKED
	Find unknown micro viruses	CHECKED
	Compressed Files Section	
	Scan compressed files (e.g. PkLite)	UNCHECKED
	Scan files in archives (e.g. ZIP)	UNCHECKED
	General Section	
	Enable File Scan caching	CHECKED
	Enable on-access scanning at system startup	CHECKED
ACTIONS TAB	***When Virus is Found Section***	
	Dropdown Selection	Clean infected files automatically
	Response to User Section	
	Send messages to users	UNCHECKED
	Disconnect remote users and deny access to network share	UNCHECKED
REPORTS TAB	***Log File Section***	
	Log to file	CHECKED
	Log file location	C:\Program Files\Network Associates\ NetShield2000\ NetShield ActivityLog.txt
	Limit size of log to [100KB]	CHECKED
	What to Log Section	

	Virus Detection	CHECKED
	Virus Cleaning	CHECKED
	Infected File Deletion	GREYED-OUT
	Infected File Move	GREYED-OUT
	Session Settings	UNCHECKED
	Sessions Summary	CHECKED
	Date and Time	CHECKED
	User Name	CHECKED
EXCLUSIONS TAB		
	Item	none

10.2.2 NetShield v4.5 for Client w/SP1

Scan Engine Version: 4.1.50
Virus Definition Version: 4.0.4167
sdat file: sdat4167.exe

DETECTION TAB	Enable System Scan	CHECKED
	Scan Section	
	Inbound files	CHECKED
	Outbound files	UNCHECKED
	Floppies on Access	CHECKED
	Floppy on Shutdown	CHECKED
	What to Scan Section	
	All files	UNCHECKED
	Program Files Only	CHECKED
	Extensions	DEFAULT SETTINGS
	Compressed Files	CHECKED
	Network Files	UNCHECKED
	General Section	
	System scan can be disabled	CHECKED
	Show icon in taskbar	CHECKED
	Advanced Section	
	Enabled heuristics scanning	CHECKED
	Enabled macro heuristics scanning	CHECKED
ACTION TAB	***When Virus is Found Section***	
	Dropdown Selection	“Prompt user for action”
	Possible Actions Section	
	Clean file	CHECKED
	Delete file	CHECKED
	Move file	CHECKED
	Stop Access	CHECKED
	Exclude File	CHECKED
ALERT TAB	***Network Alert Section***	



	Notify Alert Manager	UNCHECKED
	If 'Prompt for action' is selected Section	
	Display custom message	UNCHECKED
	Sound audible alert	CHECKED
REPORT TAB	***Log File Section***	
	Log to file	CHECKED
	Limit size of log file to "100" kilobytes	CHECKED
	What to Log Section	
	Virus Detection	CHECKED
	Virus Cleaning	CHECKED
	Infected File Deletion	CHECKED
	Infected File Move	CHECKED
	Session Settings	UNCHECKED
	Sessions Summary	CHECKED
	Date and Time	CHECKED
	User Name	CHECKED
EXCLUSIONS TAB	***Item***	
	\Recycled	REMOVE
EMAIL SCAN		
	Enable Scanning of Email Attachments	UNCHECKED
DOWNLOAD SCAN		
	Enable Internet Download Scanning	UNCHECKED
INTERNET FILTER		
	Enable Java & Active X Filter	UNCHECKED
SECURITY		
	Enable Password Protection	UNCHECKED

10.2.3 Virus Scan NT v5.1 for Client

Scan Engine Version: 4.1.60
Virus Definition Version: 4.0.4184
sdat file: sdat4184.exe

DETECTION TAB	Enable System Scan	CHECKED
	Scan Section	
	Inbound files	CHECKED
	Outbound files	UNCHECKED
	Floppies on Access	CHECKED
	Floppy on Shutdown	CHECKED
	What to Scan Section	
	All files	UNCHECKED
	Program Files Only	CHECKED
	Extensions	DEFAULT SETTINGS
	Compressed Files	CHECKED
	Network Files	UNCHECKED
	General Section	
	System scan can be disabled	CHECKED
	Show icon in taskbar	CHECKED
	Advanced Section	
	Enabled heuristics scanning	CHECKED
	Enabled macro heuristics scanning	CHECKED
ACTION TAB	***When Virus is Found Section***	
	Dropdown Selection	“Prompt user for action”
	Possible Actions Section	
	Clean file	CHECKED
	Delete file	CHECKED
	Move file	CHECKED
	Stop Access	CHECKED
	Exclude File	CHECKED
ALERT TAB	***Network Alert Section***	
	Notify Alert Manager	UNCHECKED
	If ‘Prompt for action’ is selected Section	
	Display custom message	UNCHECKED
	Sound audible alert	CHECKED
REPORT TAB	***Log File Section***	
	Log to file	CHECKED
	Limit size of log file to “100” kilobytes	CHECKED
	What to Log Section	
	Virus Detection	CHECKED
	Virus Cleaning	CHECKED
	Infected File Deletion	CHECKED

	Infected File Move	CHECKED
	Session Settings	CHECKED
	Sessions Summary	CHECKED
	Date and Time	CHECKED
	User Name	CHECKED
EXCLUSIONS TAB	***Item***	
	\Recycled	REMOVE
EMAIL SCAN		
	Enable Scanning of Email Attachments	UNCHECKED
DOWNLOAD SCAN		
	Enable Internet Download Scanning	UNCHECKED
INTERNET FILTER		
	Enable Java & Active X Filter	UNCHECKED
SECURITY		
	Enable Password Protection	UNCHECKED

AGFA HEALTHCARE
Connectivity Documentation

AGFA DICOM Bridge (ADB) – Version 2.0b

User Guide

16 May 2002

Agfa Healthcare Document No. 000xxx, Revision 2.0b

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Revision History

Version	Date	Description
1.0	31 July 1998	Initial draft – AGFA DICOM Bridge is the new name for the ADC Filter program.
1.1	11 September 1998	Added support for keywords $DATE, $TIME and $INCREMENT.
1.2	23 November 1998	Added support for the DICOM Verification Service Class. Corrected the handling of zero-length attribute values in the database records.
1.3	10 January 1999	Various bug-fixes.
1.4	29 March 1999	Multi-threading support. Multiple input/output combinations can share the database records. A maximum of 20 connections can be made simultaneously.
1.5	17 May 1999	Added description of Windows GUI.
1.6	8 November 1999	Updated GUI after review by users.
1.7	12 October 2000	Bug-fix to ensure that all values associated with mapped attributes are copied to the destination attribute. In earlier versions, only the first attribute value was copied.
1.8	20 February 2001	Updated Windows installation procedure to use InstallShield. Added maximum logfile size. Logfile is truncated once the maximum size is reached (LOGFILE-SIZE). Added adbservice.exe – to run as NT service on Windows NT platform.
1.9	15 March 2001	Added Socket Server to allow concurrent connections to same TCP/IP port. Socket Server spawns a new thread for each managed connection. Added MSVCP60.DLL to InstallShield release.
1.9a	16 May 2001	Upgrades to documentation to address SCR #s 9105, 9101, 9096, 9094, 9085, 9084, 9083, 9077, 9073
1.9b	21 May 2001	Minor changes for NT commercial version
1.9d	21 June 2001	Updated Solaris install procedure. Added Unix tool documentation. Updated Table of Contents.
2.0a	15 May 2002	Added support for redirecting associations and support for Asian languages. Added the keywords $REMOVE_COMPONENT_GROUPS, $CONVERT_EXTENDED_CHARS, $REMOVE_EXTENDED_CHARS, $CHANGE_ENCODING and $MATCH_COUNT. Changed order of mapping and update. Removed the Windows command line version. Added sections to Chapter 2. Removed the Solaris information. General enhancements to the document.

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1. Introduction

1.1 General

The AGFA DICOM Bridge is a simple device, inserted between a DICOM Storage SCU and a SCP, that can be used to modify the attributes in the messages passed between the SCU and SCP. It can be used to provide temporary solutions to connectivity problems.

ADB is intended to be used as a temporary connectivity tool – i.e, a tool to provide a temporary fix to DICOM messages between two devices so that a connection can be achieved. ADB should only be used until the cause of the connectivity problem has been solved (either in the SCU or SCP). Great care must be taken when installing ADB to ensure that the SCU & SCP vendors and the site are aware that changes are being made to the messages.

In the first versions of ADB, only the DICOM Image Service Classes are supported.

At the time of this writing, version 2.0 of ADB is only supported on the Windows platform. Use the latest 1.x version for Solaris. The database files created by this version can not be used with 1.x versions of ADB.

1.2 Definitions / Abbreviations

The following Definitions and Abbreviations are used throughout this document:

ADB	AGFA DICOM Bridge.
ADVT	AGFA DICOM Validation Tool.
ASCII	A 127 character character set that has non-printable control characters, the 26 English characters (both upper and lower case), roman numbers and some punctuation marks.
Database file	File that contains the configuration information for ADB and the saved database records.
Database record	The set of attributes that are saved for each Matching Dataset.
Dataset	The data in a DICOM C-Store Request. This is the data that makes up a DICOM image.
DICOM	Digital Imaging and Communication in Medicine.
Keyword	A value used in the configuration of ADB that will change the attribute at runtime. Keywords are started with a '$'.
Macro keyword	A keyword that provides a value for an attribute.
Matched Record	The database record that, for each of the attributes in the Matching Attributes, has attribute values that are the same as the attribute values in the Matching Dataset.
Matching Dataset	A dataset that matches all of the Matching Attributes. Only Matching Datasets will be processed by ADB.
Operation keyword	A keyword that performs an operation on an attribute value.

1.3 References

[1] ACR/NEMA Standards Publications, No PS3, 2001
DICOM Standards -
Part 1 - Introduction,
Part 2 - Conformance,
Part 3 - Information Object Definitions,
Part 4 - Service Class Specifications,
Part 5 - Data Structures and Encoding,
Part 6 - Data Dictionary,
Part 7 - Message Exchange,
Part 8 - Network Communication Support,
Part 9 - Point to Point Communication Support for Message Exchange,
Part 10 - Media Storage and File Format for Media Interchange,
Part 11 - Media Storage Application Profiles,
Part 12 - Media Formats and Physical Media for Media Interchange,
Part 13 - Print Management Point-to-Point Communication Support,
& various supporting Supplements.

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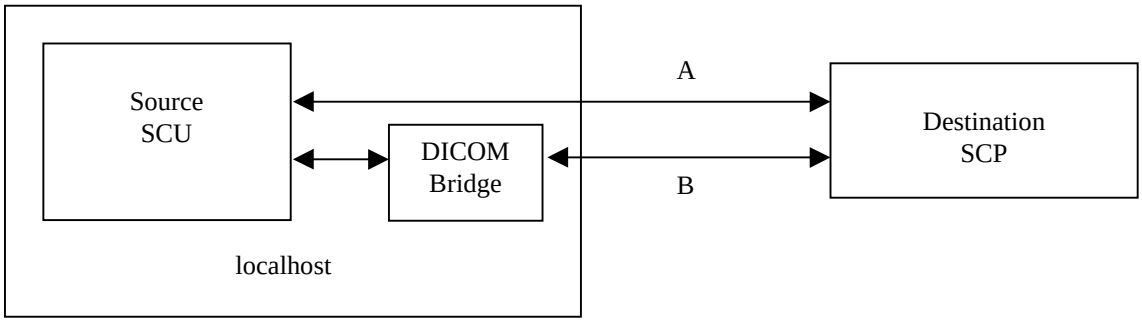
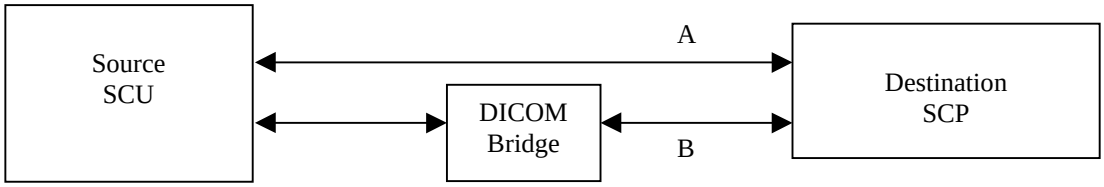
2. About the DICOM Bridge

2.1 General

The AGFA DICOM Bridge program is used between a DICOM Source SCU and Destination SCP. Initially only the DICOM Image Storage Service Classes are supported.



The DICOM Bridge can either be installed together with the Source SCU on the host computer (see above) or on a standalone computer (see below).



In the standard connection between Source SCU and Destination SCP, the SCU will make a connection with the SCP directly and exchange DICOM messages (see paths A above). When the DICOM Bridge is used, the Source SCU first makes a connection with the DICOM Bridge (as SCP), which in turn makes a connection (as SCU) with the Destination SCP (see paths B above).

The DICOM Bridge immediately passes the received message on to the SCU or SCP. Some messages are passed transparently (DICOM Bridge does not interpret them), other messages are interpreted by the DICOM Bridge and may be modified en-route.

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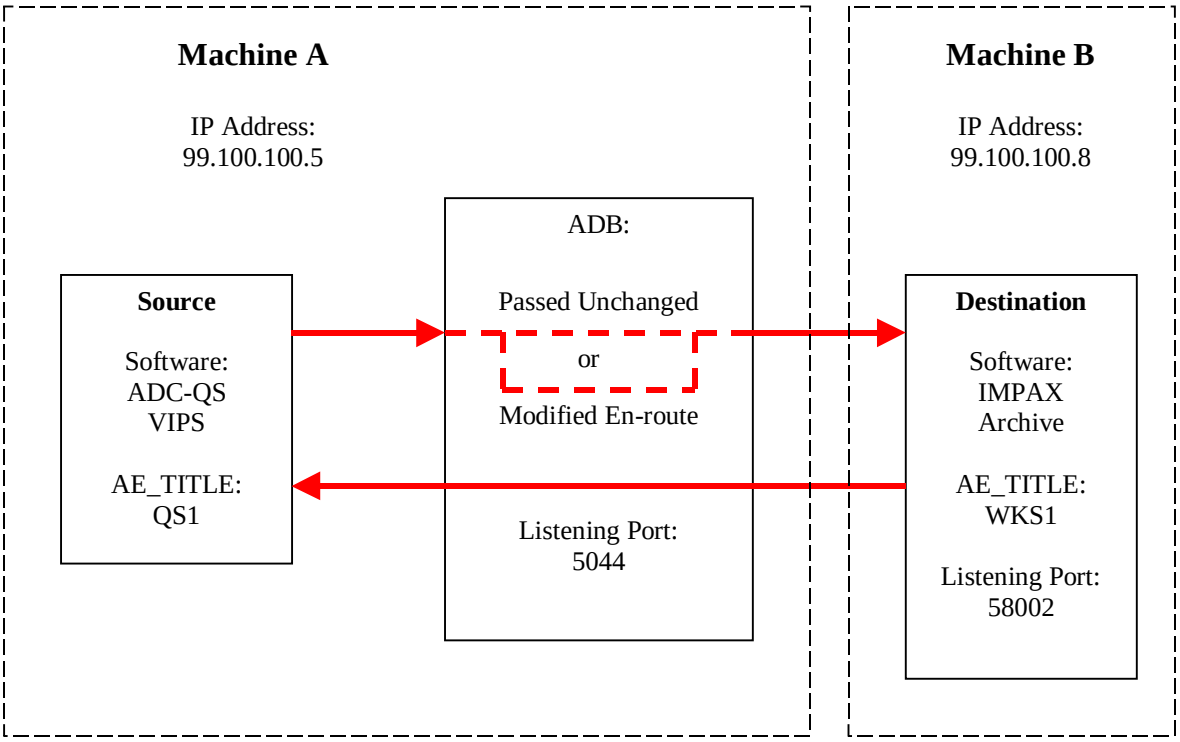
A more detailed overview diagram showing typical ADB communication is as follows:



The diagram above shows that ADB is part of the source machine and while this is typical, it is not a requirement. ADB can run on a third networked box. The important point to remember is that the CPF file used to define the network and DICOM configurations must know the IP address of the box where ADB is running and the listening port ADB is configured to use. ADB must then also be configured to know the IP address of the destination machine and the port number that the destination software is listening on. (See section 3.1, “Connection(s)” in the Configuration chapter below.)

For ADB, a valid CONNECTION line in the database.txt file for the above situation would be:
CONNECTION “5044:99.100.100.8:58002”

Notice that Machine A’s IP address is not used anywhere in ADB. The location of ADB as seen by Machine A’s software (ADC-QS, VIPS) is configured in the CPF file.

From ADB v1.4 on, multiple source and destination combinations can be defined which will share the same set of Database Records.

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2.2 Message Passing

The message passing for the storage of a single image during an Association is as follows:

Source SCU	DICOM Bridge	Destination SCP
		- wait for Connection/Association
	- wait for Connection/Association	
- connect to DICOM Bridge ->		
	- connect to Destination SCP ->	
- send Associate Request ->		
	- send Associate Request ->	
		- handle Associate Request <- return Associate Accept
	- process Associate Accept <- return Associate Accept	
- send C-STORE-RQ Command ->		
	- queue C-STORE-RQ Command	
- send first Image Dataset PDU ->		
	- decode Image Dataset PDU - perform attribute matching and modification - encode new Image Dataset PDU(s) *if association redirect* *- send Release Request ->*	
		- receive Release Request *<- return Release Response*
	- receive Release Response *- close connection with original SCP*	
		- original SCP waits for next Connection/Association
	- connect to redirect SCP *- create new Associate Request* *- send new Associate Request to redirect SCP ->*	
		- redirect SCP handles Associate Request *<- return Associate Accept* *- the redirect SCP now handles the rest of the transactions*
	- receive Associate Accept - send queued C-STORE-RQ Command ->	
		- receive C-STORE-RQ
	- send modified Image Dataset PDU(s) ->	
		- receive first Image Dataset PDU(s)
- send remaining Image Dataset PDU(s) ->		
	- send remaining Image Dataset PDU(s) ->	
		- receive remaining Image Dataset PDU(s) - handle Image <- return C-STORE-RSP
	<- return C-STORE-RSP	
- receive C-STORE-RSP - send Release Request ->		

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Source SCU	DICOM Bridge	Destination SCP
	- send Release Request ->	
		- receive Release Request <- return Release Response - wait for next Connection/Association
	<- return Release Response - wait for next Connection/Association	
- receive Release Response - make next connection to DICOM Bridge…		

NOTE: Only the first Image Dataset PDU is decoded. It is assumed that the first PDU will normally contain most demographic data (certainly true if PDU size is about 16kB). But the demographic data must be sent in a single PDU. Further enhancements to ADB will be required if this is not the case.

2.3 Overview of Dataset Processing

When a Dataset is received, the first PDU is decoded and then processed. The processed dataset is re-encoded and sent to the SCP. The remainder of the PDUs in the received dataset are then forwarded to the SCP without any processing. This section gives an overview of how the processing is done.

The first step of the processing is to determine if the dataset should be processed. This is done using the **Matching Attributes** defined in the database file. If each of the attributes that are in the Matching Attributes match the attributes in the dataset, then the dataset is a *Matching Dataset* and the dataset will be further processed. If the dataset does not match all of the Matching Attributes, then the dataset will not be processed by ADB and it will be forwarded to the SCP without any modification.

The next step in processing is to check to see if there is a database record that matches the Matching Dataset. This is done by going through each database record and comparing the values for each of the attributes that are listed in the Matching Attributes. If the values in the Matching Dataset and the database record are the same, then the database record is used as the *Matched Record*. If there is no Matched Record, then a new database record is created using the data in the Matching Dataset.

If there is a Matched Record, then the Matching Dataset is updated to set all of the attributes that are in the **Identical Attributes** in the database file to the values that are stored in the Matched Record.

For all Matching Datasets, all attributes that are in the **Remove Attributes** in the database file are then removed from the dataset. All attributes that are in the **Add Attributes** in the database file will be added to the Matching Dataset, if the attribute in the dataset does not already have a non-zero value.

The attributes in the **Mapped Attributes** in the database file will be copied from the specified attribute in the Matching Dataset to the specified attribute in the Matching Dataset. Then the attributes in the **Update Attributes** in the database file will be updated in the Matching Dataset as specified, but only if the dataset already includes the attribute. In versions of ADB prior to v2.0, the Update occurs before the Mapping. Database files that are upgraded to v2.0 or above will maintain that ordering. New database files will be created with the ordering specified here.

The **Redirect Association** Attributes in the database file are checked to see if the association should be redirected. If each of the attributes that are in the Redirect Association Attributes match the attributes in the Matching Dataset, then the association will be redirected as specified. If any of the attributes do not match, or if there are no Redirect Association Attributes, then the association will not be redirected.

The modified Matching Dataset is then re-encoded and sent to the appropriate SCP.

When the association is closed, any changes to the database records are written out to the database file.

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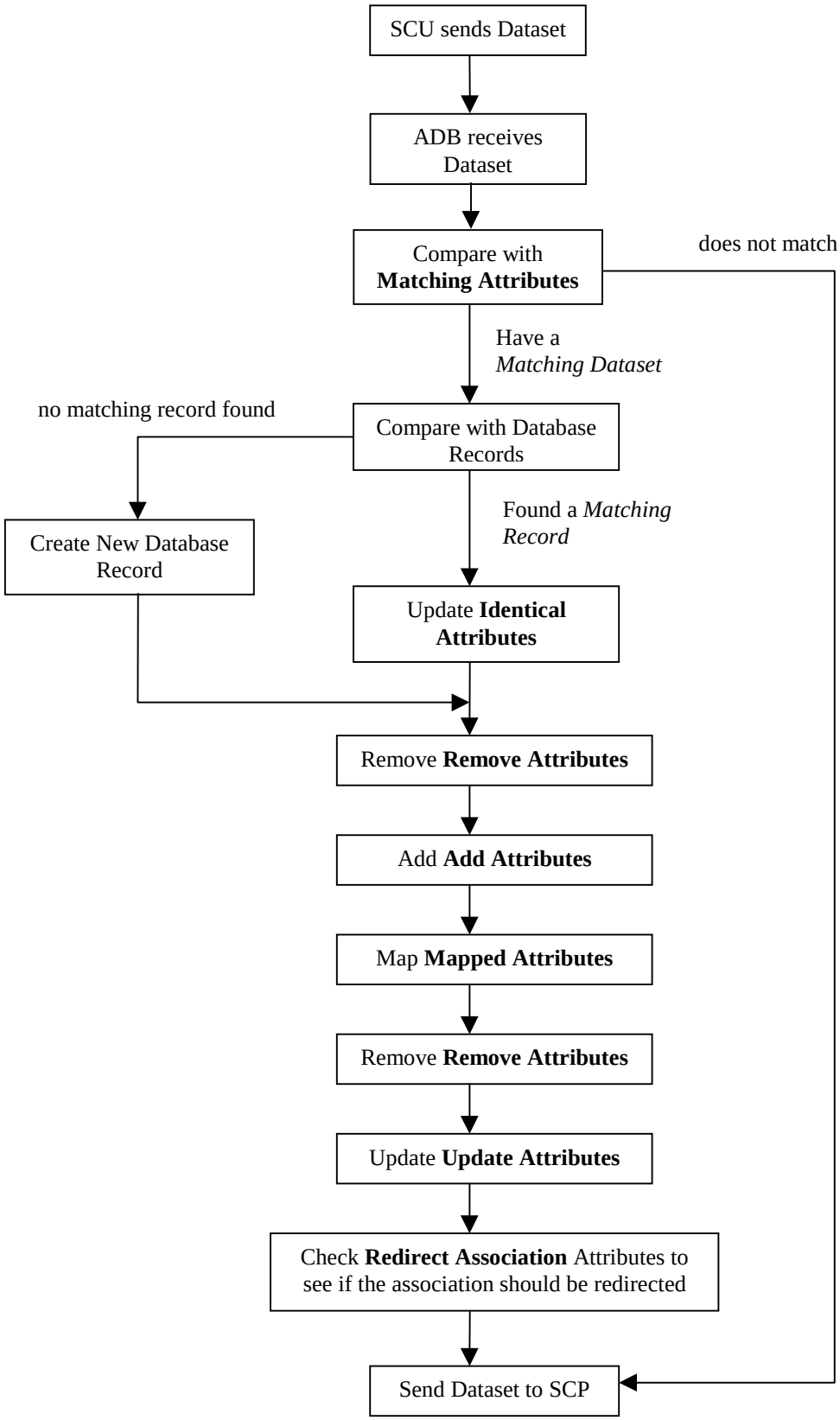
The following diagram shows the flow of the dataset processing.



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2.4 Database File

The database file stores the configuration information for the ADB and the stored database records. The configuration information is normally modified using the Windows Graphical User Interface (GUI) version of ADB. See section 4.2, “Windows Graphical User Interface”, for information on the use of the GUI to configure ADB. The definitions of the configuration parameters are given in section 3, “Configuration”.

2.4.1 Database Records

A received dataset that matches the attributes in the Matching Attributes is called a Matching Dataset. Each time a Matching Dataset is received, the database records are checked to see if there is a record that has the same values for each of the attributes in the Matching Attributes as the Matching Dataset has. If there is none, then a new database record is created based on the Matching Dataset. The information that is stored is used for processing future datasets that match this record. The record is made up of all of the attributes in the Matching, Identical and Redirect Association Attributes and all $INCREMENT and $MATCH_COUNT attributes. The number of database records stored is configurable and generally should be set to the maximum number of images processed in a day at the site.

2.4.2 Example Database File

The following is an example of the ASCII text based database file. (A file of 100 records will be approximately 50kB.)

```
DATABASE-CONTENTS

CONNECTION "1024:localhost:1030"
DEFINITION "sc-img.def"
MAXIMUM-RECORDS 100
LAST-GROUP-TO-DECODE 0x0020
MAP-BEFORE-UPDATE true
PLACEHOLDER-CHARACTER "_"
LOGGING standard
LOG-TO-FILE false
LOGFILE-SIZE 5

MATCHING-ATTRIBUTES
(0x00100010, PN)  # Patient’s Name
(0x00100020, LO)  # Patient ID
(0x00080020, DA)  # Study Date
(0x00081030, LO)  # Study Description
(0x0008103E, LO)  # Series Description
(0x00080070, LO)  # Manufacturer
(0x00081010, SH)  # Station Name
END-MATCHING-ATTRIBUTES

IDENTICAL-ATTRIBUTES
(0x0020000D, UI)  # Study Instance UID
(0x0020000E, UI)  # Series Instance UID
END-IDENTICAL-ATTRIBUTES

REMOVE-ATTRIBUTES
END-REMOVE-ATTRIBUTES

ADD-ATTRIBUTES
(0x00080021, DA, "$DATE")  # Series Date
END-ADD-ATTRIBUTES

UPDATE-ATTRIBUTES
(0x00080030, TM, "$TIME")  # Study Time
(0x00200013, IS, "$INCREMENT")  # Image Number
```

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```
END-UPDATE-ATTRIBUTES

MAPPED-ATTRIBUTES
(0x00081030, LO)  # Study Description
  (0x00180015, CS)  # Body Part Examined
END-MAPPED-ATTRIBUTES

REDIRECT-ASSOCIATION "::"
END-REDIRECT-ASSOCIATION

DATABASE-RECORD 1
(0x00100010, PN, "First^Patient")  # Patient's Name
(0x00100020, LO, "SC-I1")  # Patient ID
(0x00080020, DA, "19970917")  # Study Date
(0x00081030, LO, "Study Description")  # Study Description
(0x0008103E, LO, "Series Description")  # Series Description
(0x00080070, LO, "Manufacturer")  # Manufacturer
(0x00081010, SH, "StationName")  # Station Name
(0x0020000D, UI, "7.0")  # Study Instance UID
(0x0020000E, UI, "7.0.1")  # Series Instance UID
(0x00200013, IS, "2")  # Image Number
END-DATABASE-RECORD

END-DATABASE-CONTENTS
```

ADB will test every image received (the *received dataset*) to see if it contains the attributes for Patient's Name, Patient ID, Study Date, Study Description, Series Description, Manufacturer and Station Name. If it does not, no processing will be done on the image and the image will be sent to the Destination SCP unchanged. The ADB database will not be modified. If the image does have all of the attributes, the image matched the Matching Attributes and will be further processed and is called the *Matching Dataset*.

For a Matching Dataset, the ADB will then look for a record in the database that has the same Patient's Name, Patient ID, Study Date, Study Description, Series Description, Manufacturer and Station Name. If a record is found in the database that has all of these attributes the same as the attributes in the Matching Dataset, then a *Matched Record* has been found.

If a Matched Record is found, the received image's Study Instance UID and Series Instance UID will be modified to the database values. The Series Date will be set to today's date and added. The Study Description will be copied into the Body Part Examined. The Study Time will be set to the current system time if it is present in the received dataset. The Image Number in the Matched Record will be incremented and the new value will be set in the received dataset if it is present there. The modified image will then be sent to the Destination SCP.

If no Matched Record is found in the database, the Patient's Name, Patient ID, Study Date, Study Description, Series Description, Manufacturer, Station Name, Study Instance UID and Series Instance UID will be entered into a new database record for future consultation. The received image's Study Instance UID and Series Instance UID will **not** be modified. The Series Date will be set to today's date and added. The Study Description will be copied into the Body Part Examined. The Study Time will be set to the current system time if it is present in the received dataset. The Image Number will be set to 1 and added to the new database record. If Image Number is present in the received dataset, it will be set to 1. The modified image will then be sent to the Destination SCP.

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2.5 Limitations on Use

- Only the first Image Dataset PDU can be modified.
- Only the Image Storage Service Classes are currently supported.
- Datasets with multiple PDVs per PDU are not supported.
- Multiple valued attributes will not be stored in the database, so the Identical functionality will not work with multi-valued attributes.
- ADB will truncate person names (DICOM VR PN) to 63 characters instead of the DICOM standard 64.

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3. Configuration

This section describes each of the configuration parameters used by ADB. They are stored in the database file, along with the database records. Normally, the Windows GUI should be used to modify the configuration.

WARNING: It is possible to configure ADB in a way that will cause images from one patient to be grouped with images from another patient. Care must be taken to insure that this does not happen. At least one of the key fields used by the site to identify the patient must not be modified by ADB to insure that the transmitted images are always correctly correlated to the correct patient.

The following table summarizes the attribute configuration rules:

Attribute Rule	Where Dataset Value Comes From	Other Information
Matching	-	Specifies the Matching Dataset. No processing is done if the Dataset does not match these rules.
Identical	Matched Record	Will overwrite the value
Remove	-	Removes the value
Add	Add Attributes Rule	Will not overwrite a value
Update	Update Attributes Rule	Attribute must be present for change
Mapped	Another attribute in the Dataset	Will overwrite the value
Redirect Association	-	If all rules match, the association will be redirected

3.1 Connection(s)

ADB connections are defined by successive **CONNECTION** fields in the database file. Each **CONNECTION** is defined in terms of a local TCP/IP port number, remote host name (IP address) and remote TCP/IP port number.

ADB creates a thread that listens to the local TCP/IP port for a connection from the Source SCU. When a connection is made, ADB makes a connection to the Destination SCP using the remote host name / remote TCP/IP port. A maximum of 20 simultaneous connections can be handled by ADB.

Example:

CONNECTION **"1024:remoteHost:1030"** – Wait for association by listening to local TCP/IP port number **1024** and then connecting to the machine with **remoteHost** name on TCP/IP port **1030**.

NOTE: An error will occur on RUN if no connection lines are defined.

3.2 Definition File(s)

ADB makes use of the ADVT Definition Files. Each **DEFINITION** field in the database file identifies a single Definition File that will be loaded as part of the ADB start-up process.

A Definition File should be loaded for each DICOM Storage Service supported by the ADB connection.

Example:

DEFINITION **"sc-img.def"** - Use Secondary Capture Definition File.

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3.3 Database Size

The ADB database size is defined by the **MAXIMUM-RECORDS** field in the database file. This field defines that maximum number of records allowed in the database. ADB appends new records to the end of the database file. Once the database has grown to the maximum number of records, ADB will remove a single record from the beginning of the database file (i.e., the oldest) before inserting a new record at the end of the file.

*NOTE: When configuring the **MAXIMUM-RECORDS** value – take into account the maximum number of studies that meet the defined **matching** criteria. Example, if the matching is to be based on the same StudyDate, make sure that the **MAXIMUM-RECORDS** value is at least as big as the number of studies made by the Radiology department in one day.*

ADB searches the database from the end to the beginning (i.e., in reverse order) in an attempt to find the Matched Record.

ADB re-writes the file each time a new record is appended to the database or a record is changed.

Example:

MAXIMUM-RECORDS **256** - Maximum number of records in the database is 256.

3.4 Dataset Decoding

ADB decodes the Dataset (P-DATA-TF PDU) from group 0x0008 up to the **LAST-GROUP-TO-DECODE** field. This field should be configured to the value of the last Group used in the attribute manipulation in order to optimize performance (There is no point decoding more information than is necessary).

Example:

LAST-GROUP-TO-DECODE **0x0018** - The DICOM Dataset Attributes are ordered by increasing Tag (Group, Element) number. This flag indicates the last Group of Attributes that ADB needs to decode in order to be able to perform all the data manipulation defined. In this example the value 0x0018 means that all the Attributes from Group 0008 up to and including Group 0018 will be decoded.

3.5 Mapping / Update Ordering

In versions of ADB prior to v2.0, ADB always performed Updates before Mappings. In v2.0 and above, the order of operation is configurable. For database files that are upgraded to v2.0, the order will be maintained as Update and then Map (MAP-BEFORE-UPDATE set to **false**). For new database files the order will be Map before Update (**MAP-BEFORE-UPDATE** set to **true**). It is not expected that this value should be changed, so it has not been added to the Windows Configuration dialogs.

Example:

MAP-BEFORE-UPDATE **true** - The Mapped Attributes will be done before the Update Attributes

3.6 Placeholder Character

The placeholder character is used by ADB to represent characters that are not part of the printable ASCII character set when the keyword $REMOVE_EXTENDED_CHARS is used. It will also be used in several error conditions. The placeholder character must be a printable ASCII character.

Example:

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PLACEHOLDER-CHARACTER "_"	- When $REMOVE_EXTENDED_CHARS is used, any non-ASCII printable character will be replaced with '_'.

3.7 Logging

ADB can be configured to operate at several levels of verbose output. The "verboseness" is defined by the database file entry **LOGGING** which can take one of the values:

- **none** – no information output produced by ADB. Error messages will be output. Using the menu View / Database will also generate log output.
- **standard** – ADB will display high-level messages to indicate what is happening during the message exchange between the Source SCU and Destination SCP devices.
- **debug** – ADB will display detailed information on the messages exchanged between the Source SCU and Destination SCP. **Standard** level verboseness is enabled here too.

In addition, ADB can direct the logging to file when the database file entry **LOG-TO-FILE** is set **true** (other value is **false**). The maximum logfile size is defined by **LOGFILE-SIZE** expressed in Mb (Min: 1Mb – Max 20Mb). When logging to file, the current log information is logged to the file "adblog.txt" in the directory where ADB is installed. When that file is about 500kb in size, it is renamed to "adblog1.txt", and a new "adblog.txt" file will be started. Older versions of the log file will be renamed to higher numbered files. The oldest file will have the highest number. When the logfile size is exceeded, the oldest logfile will be deleted.

Example:

LOGGING	**standard**	- Standard verbose level logging.
LOG-TO-FILE	**true**	- Direct logging to file.
LOGFILE-SIZE	**5**	- Maximum logfile size is 5Mb.

3.8 Matching Attributes

The attribute matching is done by taking the received DICOM Dataset and checking whether the attributes defined as Matching Attributes are present. The matching can be defined as:

a) Attribute must be present in Dataset. This means that in order to meet the matching criteria the given attribute must, at least, be present with a zero-length.
b) For String based VR, wildcards can be used as the matching pattern. The '*' is used to match against a number of characters. The '?' is used to match against a single character at same position in the attribute as in the matching pattern. For multi-byte characters, the '*' and '?' are used to match the bytes in the characters and not the whole characters.
c) For both String and Number based VR, exact values can be defined as the matching pattern.

At least one Matching Attribute should be defined. If it is desired to match on every Dataset received, the Study Instance UID (0020,000D) should be set as the Matching Attribute. This is a required attribute and will be present in each Dataset.

Note: When using the ADB GUI, after making a change to the Matching Attributes configuration, and then the application is run, when a Dataset is received that has the attributes that are in the Matching Attributes as zero length, ADB will fail to match on the Dataset. The workaround is to always exit and restart ADB after changing the Matching Attributes.

ADB provides support to match the following DICOM VR attribute types:

a) String based VR – AE, AS, CS, DA, DS, DT, IS, LO, PN, SH, TM, UI
b) Number based VR – AT, FL, FD, SL, SS, UL, US

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Attributes with the VR values LT, OB, OW, SQ, ST, UN and UT should not be used as Matched Attributes although the software will not prevent this.

Examples:

(0x00100010, PN) - Patient Name must be present in the Dataset for a match to occur.
(0x00100010, PN, "D*") - Patient Name must be present and start with a 'D' for a match to occur.

(0x00100010, PN, "D?E") - Patient Name must be present with a length of 3 characters; the first character being a 'D' and the last a 'E'. The middle character can be anything for a match to occur.

(0x00100010, PN, "DOE") - Patient Name must be present with a value 'DOE" for a match to occur.

3.9 Identical Attributes

The first time a Dataset matches all the Matching Attributes and there is no Matched Record in the database, a copy is made of all the attributes defined as being identical and these attributes are stored in the ADB database in a new record. When another Dataset matches this record, the set of stored Identical Attributes is copied into the new Dataset (over-writing any previous values).

ADB provides support to make the following DICOM VR attribute types identical:

a) String based VR – AE, AS, CS, DA, DS, DT, IS, LO, PN, SH, TM, UI
b) Number based VR – AT, FD, FL, SL, SS, UL, US

Attributes with the VR values LT, OB, OW, SQ, ST, UN and UT should not be used as Identical Attributes although the software will not prevent this.

Example:

(0x0020000D, UI) - Store the Study Instance UID for each unique Dataset which matches the Matching Attributes. When any other Dataset matches the Matching Attributes of the stored record, over-write the Study Instance UID with that stored from the first Dataset.

3.10 Remove Attributes

If the Dataset matches the Matching Attributes, then the defined Remove Attributes will be removed from the Dataset.

ADB provides support to remove the following DICOM VR attribute types:

a) String based VR – AE, AS, CS, DA, DS, DT, IS, LO, LT, PN, SH, ST, TM, UI, UN, UT
b) Number based VR – AT, FD, FL, SL, SS, UL, US

NOTE: Attributes with the VR values OB, OW and SQ should not be used as Remove Attributes although the software will not prevent this.

Example:

(0x00080060, CS) - Remove Modality attribute from Dataset.

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3.11 Add Attributes

If the Dataset matches the Matching Attributes, and the Add Attribute does not exist or has no value in the Dataset, then the defined Add Attributes will be added to the Dataset.

ADB provides support to add the following DICOM VR attribute types:

a) String based VR – AE, AS, CS, DA, DS, DT, IS, LO, LT, PN, SH, ST, TM, UI, UT
b) Number based VR – AT, FD, FL, SL, SS, UL, US

Attributes with the VR values OB, OW, SQ and UN should not be used as Add Attributes although the software will not prevent this.

Example:

(0x00081010, SH, "Station Name") - All Datasets which match the Matching Attributes and do not already have a value for Station Name will have the Station Name attribute added – with the value "Station Name".

NOTE: It is not appropriate to allow NULL or blank values for an add attribute. This will cause a database parse error when ADB is started.

3.12 Update Attributes

If the Dataset matches the Matching Attributes, then the defined Update Attributes will be updated to the values specified if, and only if, the attribute is present in the Dataset.

ADB provides support to update the following DICOM VR attribute types:

c) String based VR – AE, AS, CS, DA, DS, DT, IS, LO, LT, PN, SH, ST, TM, UI, UT
d) Number based VR – AT, FD, FL, SL, SS, UL, US

NOTE: Attributes with the VR values OB, OW, SQ and UN should not be used as Update Attributes although the software will not prevent this.

Example:

(0x00280034, IS, "4", "3") - All Datasets which match the Matched Attributes will have the Pixel Aspect Ratio changed to the value 4:3, if the Pixel Aspect Ratio is present in the Dataset.

3.13 Mapped Attributes

If the Dataset matches the Matching Attributes, then the defined Mapped Attributes will be copied from one part of the Dataset to another part. Any existing value will be overwritten by the mapped value. A mapping can be made from one attribute of the same VR group as the other, i.e., String based VR can be mapped to String based VR; Number based VR to Number based VR and Floating Point based VR to Floating Point based VR. Where necessary the length of the attribute values being mapped will be truncated to fit the new VR.

ADB provides support to map the following DICOM VR attribute values:

a) String based VR – AE, AS, CS, DA, DS, DT, IS, LO, LT, PN, SH, ST, TM, UI, UT
b) Number based VR – AT, SL, SS, UL, US
c) Floating Point based VR – FD, FL

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NOTE: Attributes with the VR values OB, OW, SQ and UN should not be used as Mapped Attributes although the software will not prevent this.

NOTE: A bug in v2.0 of ADB causes Person Name values to be truncated to 63 characters in length, instead of the DICOM specified 64 characters.

Example:

(0x00081030, LO)
(0x00180015, CS) - All Datasets which match the Matching Attributes will have the Study Description mapped (copied) into the Body Part Examined. The LO value may be truncated to fit into the CS value.

3.14 Redirect Association Attributes

If the Dataset matches the Matching Attributes, then each of the Redirect Association Attributes will be checked to see if they match the attributes in the Dataset. If all of the Redirect Association Attributes match the Dataset, the current association will be closed and a new association will be opened to the specified AE Title, remote host name (IP address) and remote TCP/IP port number. The modified Dataset will be sent using the new association. There are 2 cases for matching:

a) If a value is given for the Redirect Association Attribute, that value must exactly match the value in the Dataset. Wild cards can be used as for the Matching Attributes.
b) If no value is given, the value in the Dataset must match the value for the attribute in the Matched Record.

If no Redirect Association Attributes are specified, the association will never be redirected.

The association is redirected for the current Dataset only. If the next Dataset does not match the Redirect Association Attributes, and the association is still open to the redirected AE and IP/port, the redirected association will be closed and a new association to the original connection will be re-established.

The value for any of the AE Title, Remote Host Name or Remote Port Number can be left blank, in which case, the value used for the original connection will be used. For example: the value "**NEW_AE::**" will cause the new association to be opened to the called AE title "NEW_AE", on the same host and port as the original connection.

ADB provides support to match for redirection the following DICOM VR attribute types:

c) String based VR – AE, AS, CS, DA, DS, DT, IS, LO, PN, SH, TM, UI
d) Number based VR – AT, FL, FD, SL, SS, UL, US

Attributes with the VR values LT, OB, OW, SQ, ST, UN and UT should not be used as Redirect Association Attributes although the software will not prevent this.

Example:

REDIRECT-ASSOCIATION "NEW_AE:new_hostname:1030"
(0x00191065, US, "$MATCH_COUNT") - All Datasets which match the Matching Attributes and which have the private attribute (0019,1065) equal to the number of times this Matched Record has been matched, will be redirected to the remote host named "new_hostname", port number 1030, and will use the Called AE Title of "NEW_AE".

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3.15 Attribute Value Keywords

ADB supports keywords which can be used to cause ADB to generate values for certain attributes on the fly and for performing operations on values. The keywords that generate values are called *macro keywords* and the keywords that perform operations are called *operation keywords*. The macro keywords are:

- $DATE
- $TIME
- $INCREMENT
- $MATCH_COUNT

The operation keywords are:

- $REMOVE_COMPONENT_GROUPS
- $CONVERT_EXTENDED_CHARS
- $REMOVE_EXTENDED_CHARS
- $CHANGE_ENCODING

More than one operation keyword can be specified for each attribute. The operations are performed in the order listed above. Operation keywords cannot be mixed with non-keyword values (the non-keyword value will be ignored). Only the first value in the attribute is checked for keywords. The operation keywords are applied to all of the values in the Dataset attribute.

Keywords are always entered as text values (in quotes – “”), even if the VR type is a numeric data type.

3.15.1 $DATE Keyword

ADB will use the current system date as the attribute value.

For Update Attributes and Add Attributes.

Only VR type DA is supported.

3.15.2 $TIME Keyword

ADB will use the current system time as the attribute value.

For Update Attributes and Add Attributes.

Only VR type TM is supported.

3.15.3 $INCREMENT Keyword

ADB will increment the attribute value stored in the corresponding Matched Record. The incremented value will be used as the attribute value. The first value is 1. This is the same as $MATCH_COUNT, except the attribute that is incremented must be in the Dataset.

For Update Attributes, Add Attributes and Redirect Association Attributes.

VR types IS, SL, SS, UL, US are supported.

3.15.4 $MATCH_COUNT Keyword

ADB will increment a special private Match Count attribute value stored in the corresponding Matched Record. The incremented value will be used as the attribute value. The first value is 1. This is the same as $INCREMENT, except the attribute that is incremented will not be in the Dataset.

For Update Attributes, Add Attributes and Redirect Association Attributes.

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VR types IS, SL, SS, UL, US are supported.

3.15.5 $REMOVE_COMPONET_GROUPS Keyword

ADB will remove any DICOM component groups from a Person Name in the Dataset attribute value by truncating the value at the first equal sign in the value. This will remove the ideographic and phonetic versions of the name.

For Update Attributes.

Only VR type PN is supported.

3.15.6 $CONVERT_EXTENDED_CHARS Keyword

For the attribute value in the Dataset, ADB will remove escape sequences and convert any non-ASCII value to its hexadecimal equivalent preceded by a '$' sign. For example, the ISO Latin 1 representation of "Günther" would be changed to "G$F6nther". Multi-byte characters will use 4 hex digits, so "山田" will be changed to "$3B33$4544". This will increase the length of the value and may force the value to be truncated at its maximum length.

For Update Attributes.

VR types LO, LT, PN, SH, ST, UT are supported.

3.15.7 $REMOVE_EXTENDED_CHARS Keyword

For the attribute value in the Dataset, ADB will remove escape sequences and change all non-ASCII characters to the Placeholder Character. For example, if the Placeholder Character is '+', the ISO Latin 1 representation of "Günther" would be changed to "G+nther". The multi-byte value "山田" will be changed to "++". The character length of the string will be unaffected by this change.

For Update Attributes.

VR types LO, LT, PN, SH, ST, UT are supported.

3.15.8 $CHANGE_ENCODING(set) Keyword

ADB will change the encoding of the attribute value in the Dataset to the encoding specified by *set*. The only value supported by *set* for this release is "UTF8". For example, the following Update Attribute will change the Patient's Name from the standard DICOM encoding to UTF-8 (a form of Unicode):

(0x00100010, PN, "CHANGE_ENCODING(UTF8)")

For Update Attributes.

VR types LO, LT, PN, SH, ST, UT are supported.

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4. Working with the DICOM Bridge

4.1 General

This version of the AGFA DICOM Bridge program only runs under Windows NT (GUI, NT Service). The Solaris2.5 (Command-Line) is not supported.

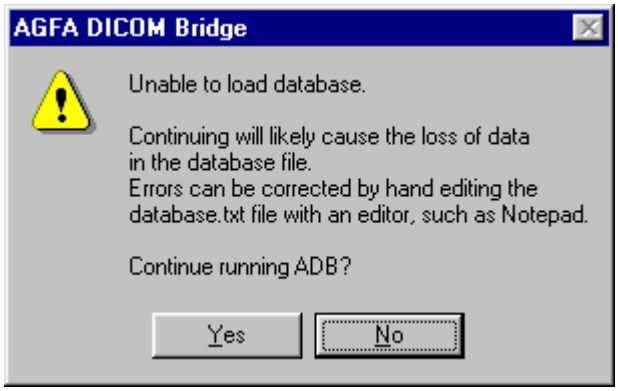
The database files generated by the version 2.0 Graphical User Interface can not be used for prior versions of ADB. A parse error will be generated by the older ADB on startup if they are used. (The older ADB does not understand the new values added by this release).

4.2 Windows Graphical User Interface

ADB provides a Windows GUI to allow simple configuration and use. This is started by selecting “AGFA DICOM Bridge” from the Windows Start / Programs menu.

If the ADB Service is running, it should be stopped before running the ADB GUI. See section 5.2.3, “Starting the ADB NT Service” for information about starting and stopping the Service.

When ADB is started a warning message can be given that states:


AGFA DICOM Bridge
Unable to load database.
Continuing will likely cause the loss of data in the database file.
Errors can be corrected by hand editing the database.txt file with an editor, such as Notepad.
Continue running ADB?
Yes
No

This warning can be generated if ADB is unable to parse the database file or if the file does not exist. If the ADB has not been configured yet, there is no harm in continuing to run ADB. If a configuration exists, then it is very likely that continuing to run ADB will cause the loss of some or all of the configuration and saved database records. The database.txt file (which will be in the directory that ADB is installed in) should be hand edited using a text editor, such as Notepad, to fix the configuration problem. The ADB screen in the background should give some indication of the problem that was encountered while opening the database.txt file.

4.2.1 Main menu options

The main ADB menu options are **Bridge**, **View** and **Help**. See below for submenu descriptions.

From the Bridge option, the user can Run, Configure, Cleanup or Exit the application.

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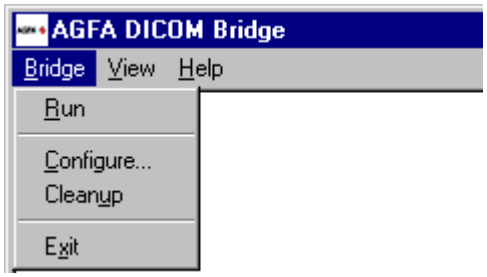
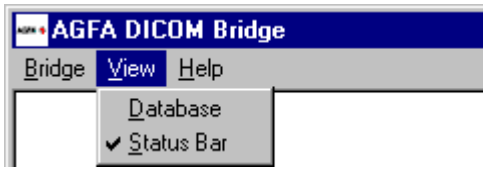


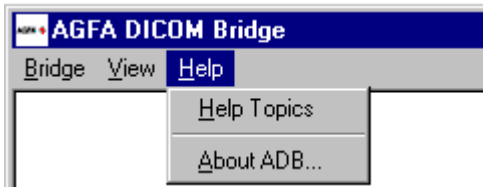
- **Run** – start the application running. All connection threads are created to listen to the configured TCP/IP local port numbers. *[**NOTE:** Once the application is running, it is no longer possible to change the configuration of ADB without first exiting and restarting ADB.]*
- **Configure** – the database file parameter settings can be configured. For details see Configuration below. *[**NOTE**: ABD must be fully configured before running the application.]*
- **Cleanup** – the database can be cleaned up by deleting the current set of database records.
- **Exit** – quit the application.

From the View option, the user can view the Database and Status Bar.



- **Database** – the current database content can be viewed. This option also displays the all the database records.
- **Status Bar** – toggle the view of the Status Bar on and off.

From the Help option, the user can get help about the application.



- **Help Topics** – online help – not implemented yet.
- **About ADB** – displays ADB version number and copyright messages.

4.2.2 Configure Dialog

This dialog allows the user to configure all aspects of ADB. The Definition File, Maximum number of Database Records, Last Group to Decode, Placeholder Character and Verboseness can be configured here.

When the Definition File is changed, ADB must be exited and restarted for the change to take place.

After making configuration changes, ADB should be exited and restarted before running the application.

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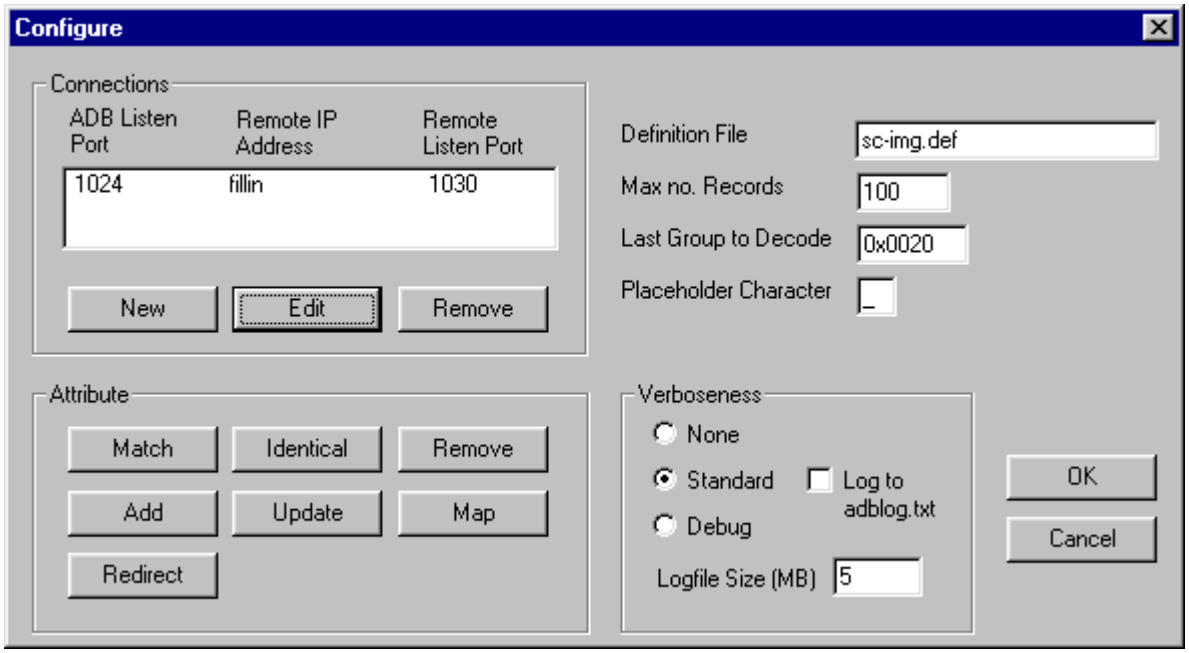


Connections can be added by pressing the **New** button. The Connection Dialog will appear (see below).

A Connection can be modified by selecting the ADB Listen Port of the connection from the list and pressing the **Edit** button. The Connection Dialog will appear (see below).

A Connection can be deleted by selecting the ADB Listen Port of the connection from the list and pressing the **Remove** button.

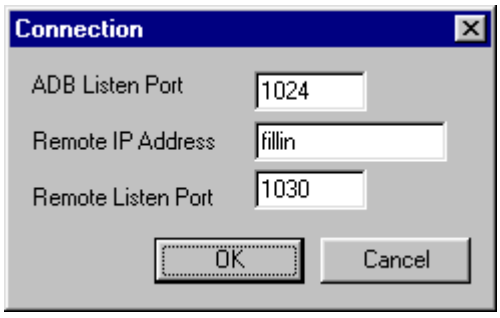
The Attribute manipulation can be configured by pressing the appropriate **Match**, **Identical**, **Remove**, **Add**, **Update**, **Map** or **Redirect** button (see below).

The Verboseness of the output produced by ADB can be configured to:

- **None** – no information output produced by ADB. Error messages will be output. Using the menu View / Database will also generate log output.
- **Standard** – ADB will display high-level messages to indicate what is happening during the message exchange between the Source SCU and Destination SCP devices.
- **Debug** – ADB will display detailed information on the messages exchanged between the Source SCU and Destination SCP. **Standard** level verboseness is enabled here too.

4.2.3 Connection Dialog

This dialog is used to define a new connection or edit an existing connection.



The user should supply/modify the ADB Listen Port, Remote IP Address and Remote Listen Port and save the settings by pressing the **OK** button.

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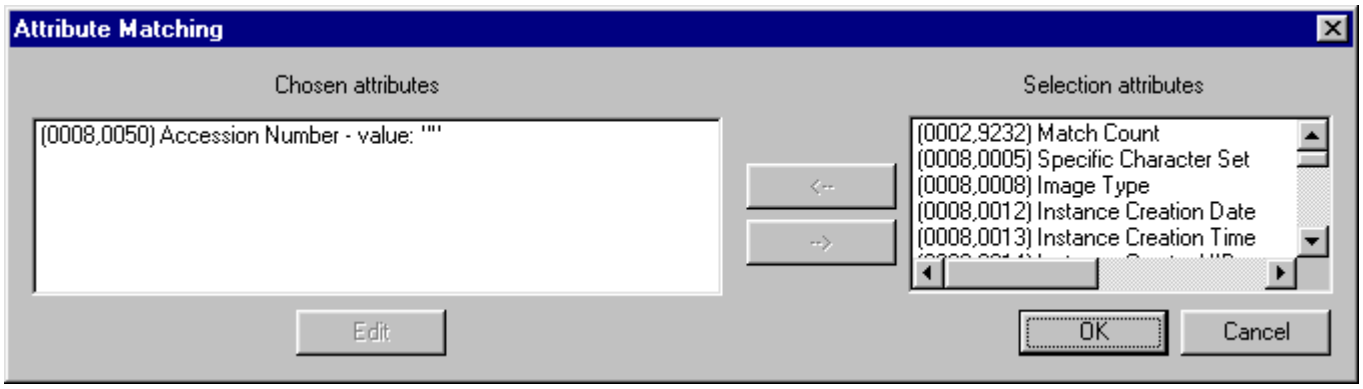
4.2.4 Attribute Matching Dialog

An attribute can be added to the Matching Attribute list by selecting the required attribute in the Selection attributes list and pressing the ← (Select) button. A value can be given to the attribute being matched by selecting the attribute from the Chosen attributes list and pressing the **Edit** Button. The Attribute Value Dialog will appear - see below.

An attribute can be removed from the Matching Attribute list by selecting the required attribute in the Chosen attributes list and pressing the → (Deselect) button.

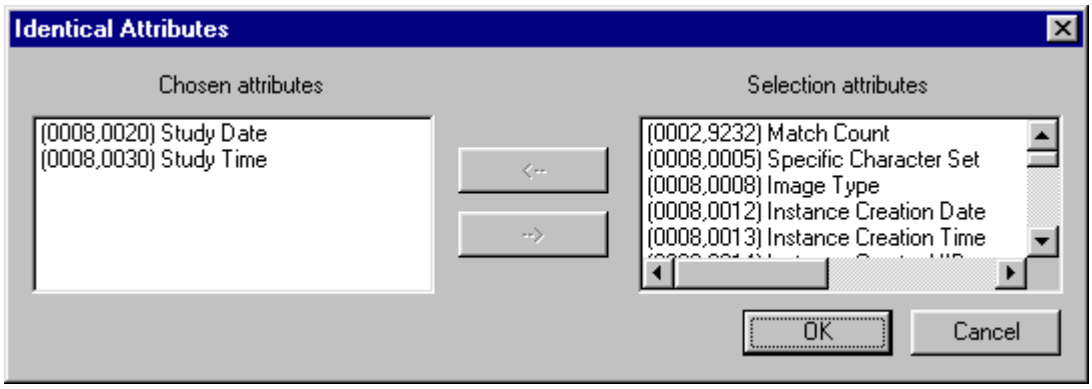
WARNING: When the OK button is pressed to leave this dialog, any zero length Matching Attributes will not be correctly handled by the application until it is restarted. **After exiting this dialog (even if no changes are made), ADB must be exited and restarted before running the application.**



4.2.5 Identical Attributes Dialog

An attribute can be added to the Identical Attribute list by selecting the required attribute in the Selection attributes list and pressing the ← (Select) button.

An attribute can be removed from the Identical Attribute list by selecting the required attribute in the Chosen attributes list and pressing the → (Deselect) button.



4.2.6 Attribute Removal Dialog

An attribute can be added to the Attribute Removal list by selecting the required attribute in the Selection attributes list and pressing the ← (Select) button.

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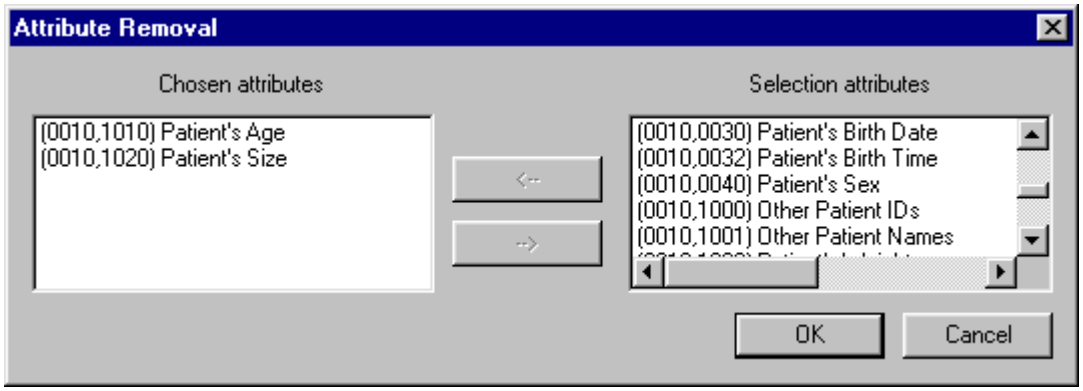
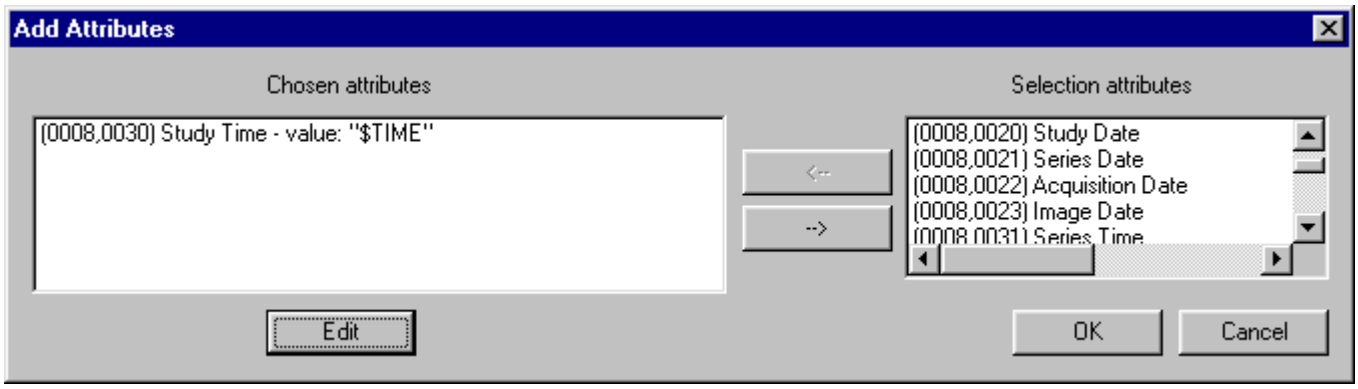
An attribute can be removed from the Attribute Removal list by selecting the required attribute in the Chosen attributes list and pressing the → (Deselect) button.



4.2.7 Add Attributes Dialog

An attribute can be added to the Add Attribute list by selecting the required attribute in the Selection attributes list and pressing the ← (Select) button. A value can be given to the attribute being added by selecting the attribute from the Chosen attributes list and pressing the **Edit** button. The Attribute Value Dialog will appear – see below.

An attribute can be removed from the Add Attribute list by selecting the required attribute in the Chosen attributes list and pressing the → (Deselect) button.



4.2.8 Update Attributes Dialog

An attribute can be added to the Update Attribute list by selecting the required attribute in the Selection attributes list and pressing the ← (Select) button. A value can be given to the attribute being added by selecting the attribute from the Chosen attributes list and pressing the **Edit** button. The Attribute Value Dialog will appear – see below.

An attribute can be removed from the Update Attribute list by selecting the required attribute in the Chosen attributes list and pressing the → (Deselect) button.

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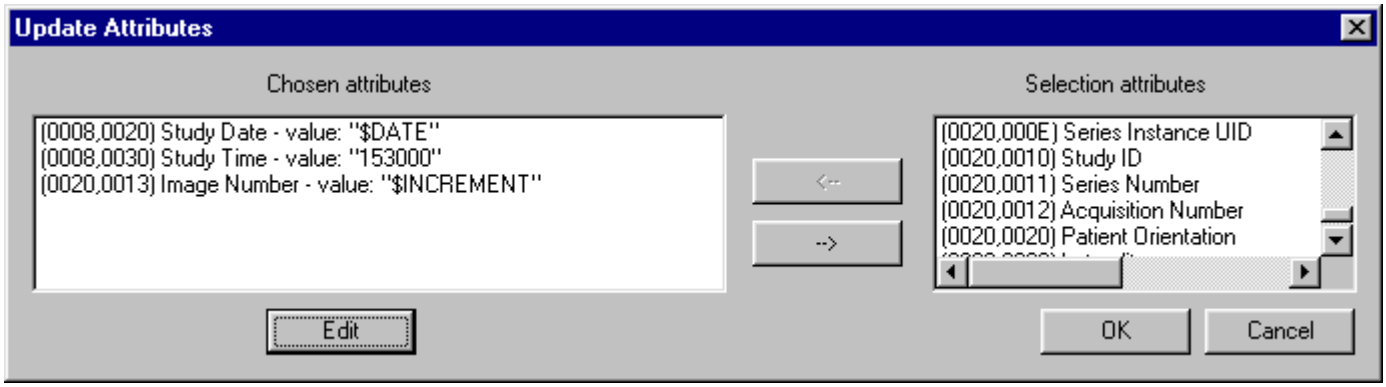
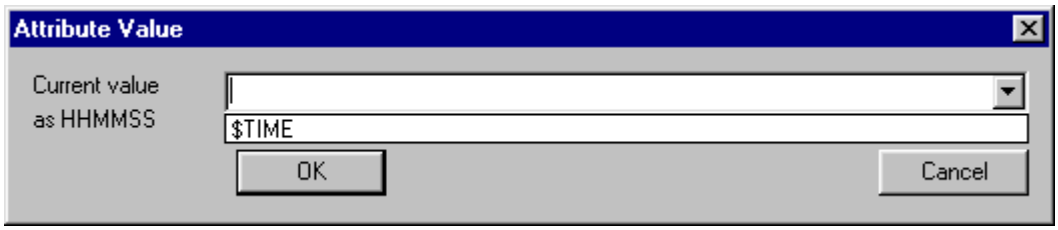


4.2.9 Attribute Value Dialog

This dialog allows the user to define an attribute value. If any Defined Terms, Enumerated Values or Keywords are associated with the attribute, these will be displayed as selection options for the Current value. Either select or enter an attribute value and press the **OK** button. (Where appropriate the attribute value will be validated by ADB.)

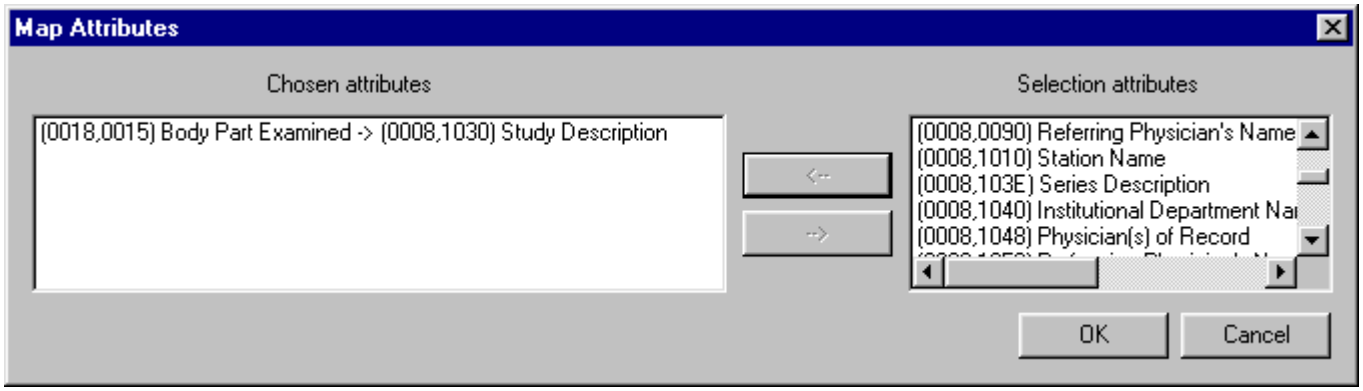


NOTE: An attribute of type DA (date) cannot be reset to its default value ("") once it has been edited. To reset such an attribute, deselect and reselect the attribute.

4.2.10 Map Attributes Dialog

An attribute can be added to the Mapped Attribute list by selecting the required **"mapped to"** attribute in the Selection attributes list and pressing the ← (Select) button. The **"mapped from"** dialog will appear – see below.

An attribute can be removed from the Mapped Attribute list by selecting the required attribute in the Chosen attributes list and pressing the → (Deselect) button.



The "mapped from" attribute should be selected from the Selection attributes list and the **OK** button pressed. A mapping will then be set up between the "mapped from" attribute and the "mapped to" attribute.

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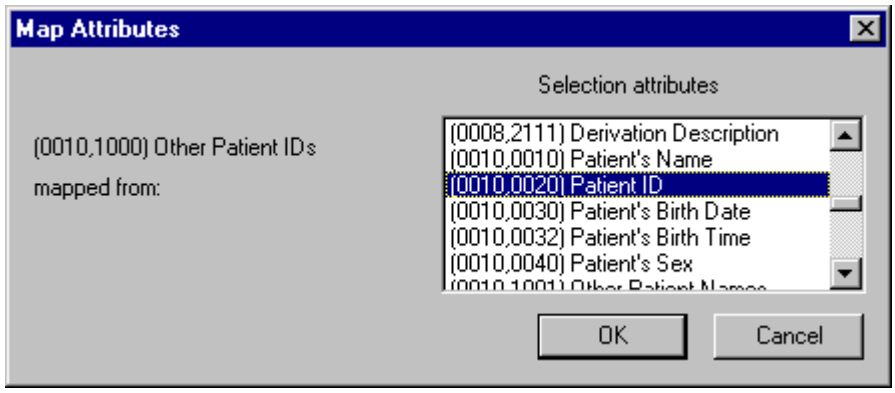
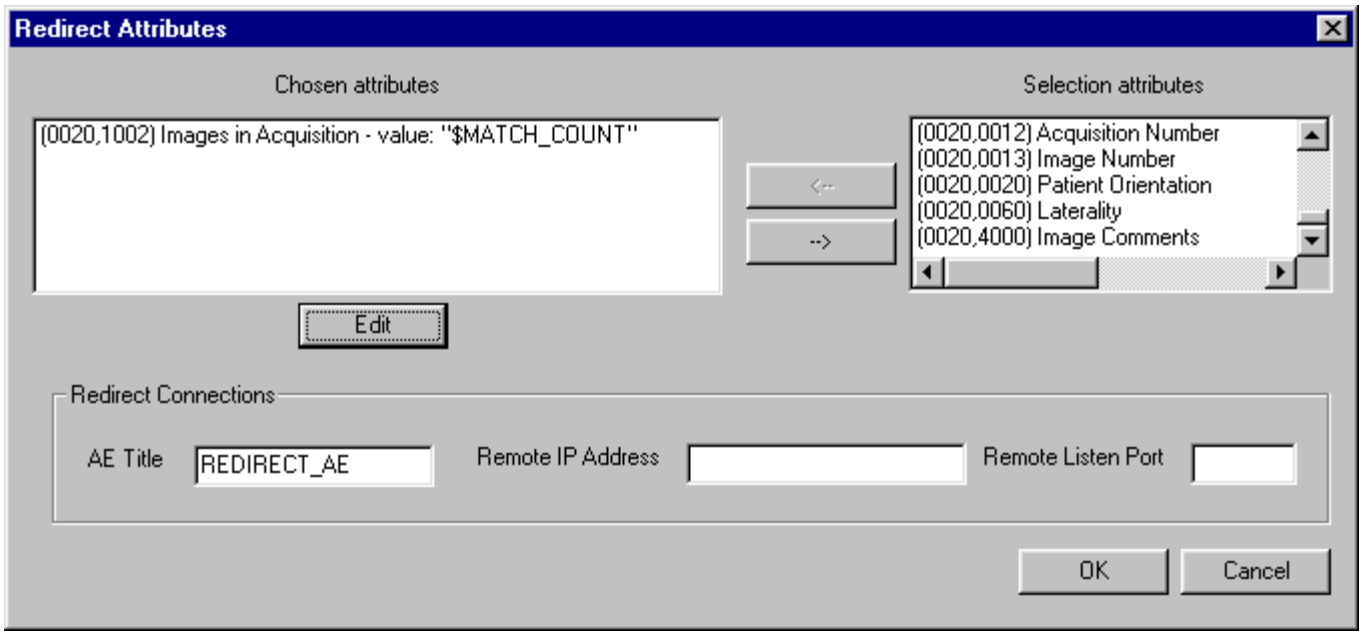


4.2.11 Attribute Redirect Association Dialog

An attribute can be added to the Redirect Association Attribute list by selecting the required attribute in the Selection attributes list and pressing the ← (Select) button. A value can be given to the attribute being matched by selecting the attribute from the Chosen attributes list and pressing the **Edit** Button. The Attribute Value Dialog will appear - see above.

An attribute can be removed from the Redirect Association Attribute list by selecting the required attribute in the Chosen attributes list and pressing the → (Deselect) button.

The Redirect Connection information can be changed by entering data in the appropriate fields. The fields can be left blank if the value is to take on the value from the original association.



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4.3 Working with Multi-Byte and Special Characters

In order to enter multi-byte characters, escape codes and other non-ASCII characters, the value of the character must be entered in hexadecimal format. For example, the value “Günther” is entered as “G\xF6nther”. The value “山田” is entered as “\x3B\x33\x45\x44” or as “;3ED” which is the ASCII representation of the bytes in the characters. Often, text can be copied and pasted into ADB and ADB will convert the value to hex as needed. But when doing this care must be taken that the data pasted in is encoded in the correct character set (the ISO 2022 character sets supported by DICOM).

Some special values will also be converted by ADB. The special characters used are:

Character	Escape Code Used by ADB
Line Feed	\n
Form Feed	\f
Carriage Return	\r
Escape	\x1B
“ (Double Quote)	\”
\ (Backslash)	\\
Any character that is not a printable ASCII character	\x??, where ?? is the hex value of the byte

Note that the individual bytes of multi-byte characters can often be represented by printable ASCII characters. In this case, ADB will display them as ASCII characters instead of the hex code.

The wild card matching used for Matching Attributes and Redirect Association Attributes are byte based. So a ‘?’ will match a single byte of a multi-byte character. To match a whole character, ‘??’ must be used. The ‘*’ will match into the middle of a multi-byte character. The escape sequences are considered in the matching.

4.4 Working With Private Attributes

In order for ADB to work with private attributes, the attributes must be added to a definition file. One of the existing definition files should be copied to a new file and then the definition file should be edited using ADVT to add the private attributes. After this is done, configure ADB to use the new Definition File. Exit and restart ADB before continuing. The private attributes can now be used as any other attribute.

Note: Some of the definition files have strange line termination and using a standard editor, such as Notepad to edit them can cause them to become corrupt. Before using a standard editor on a definition file always make a backup copy. After editing the file, reopen it to make sure it is not corrupt. The safest way to edit the definition files is with ADVT, using the File / Open / Definition File menu.

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5. Installation

5.1 General

ADB can be installed either on a Source SCU machine or separate computer. ADB should not be installed on the Destination SCP device, unless it can be certain that only one Source SCU connection will be made at a time.

5.2 Windows(NT)

5.2.1 Upgrading from a Previous Version

If upgrading from a previous version of ADB, use the following steps:

1. Stop the ADB Service if it is running. See below for details on stopping the service. Any unable to stop the service error message can be ignored, this is a known bug.
2. The current database.txt file should be saved.
3. The previous version of ADB should be uninstalled using the control panel Add/Remove Programs.
4. Install the new version of ADB. See below.
5. Copy the saved database.txt file back to the ADB directory.
6. Run the Windows ADB GUI to upgrade the database.txt file.
7. Exit the GUI and restart it to verify the configuration is correct. Exit the GUI again.
8. Restart the ADB Service

5.2.2 Installing ADB

ADB is released as a self-extracting .EXE file. The current release is "**Agfa DICOM Bridge v2.0.09b**". The user should double-click the self-extracting .EXE file to start the InstallShield. It is advisable to chose the default options for the installation. This means that all software executables, definition files and database file will be installed under <INSTALLDIR> of **E:\agfa\adb.** (You should modify this <INSTALLDIR> to C:\agfa\adb when no E: drive is available – using Browse button.)

The Windows(NT) release provides two executables:

- adbgui.exe – this is the GUI version and is automatically installed under the Start -> Programs menu.
- adbservice.exe – this must be installed from the <INSTALLDIR>.

Note: *The full pathname of the Definition File is no longer required to be configured in the* ***database.txt*** *file in this version of ADB. ADB will automatically look in the directory it is run from for the Definition File.*

5.2.3 Starting the ADB NT Service

In this version of ADB, the NT Service (adbservice.exe) is automatically installed when ADB is installed. It is installed as a manual start service and needs to be set to automatic start to be used:

a) Once the database.txt file has been setup as required, the NT service can be set for automatic startup. This is done from the Services dialog (Programs -> Settings -> Control Panel -> Services). Highlight the adbservice and click on Startup… Then select Automatic for the Startup Type. Click OK.

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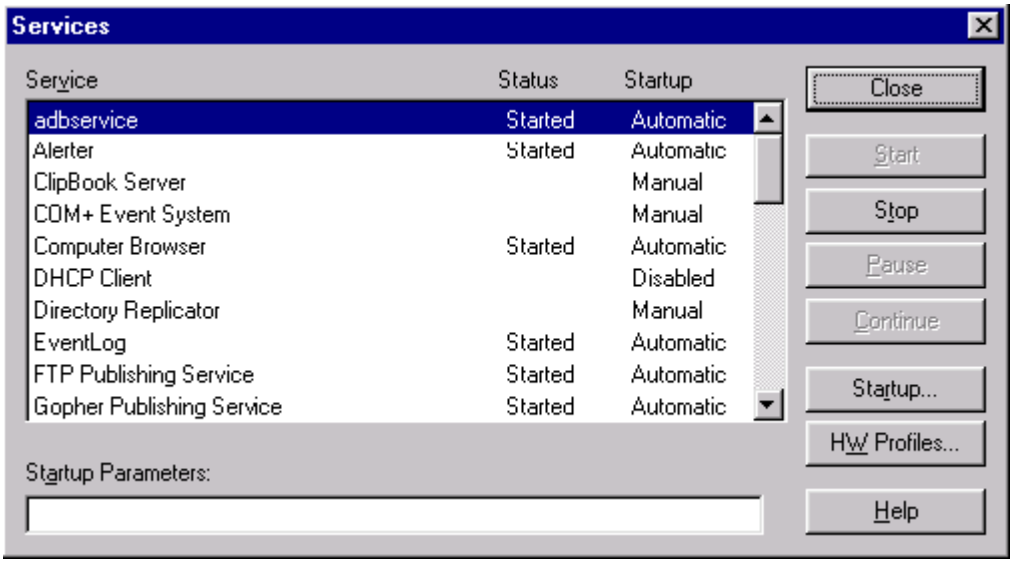
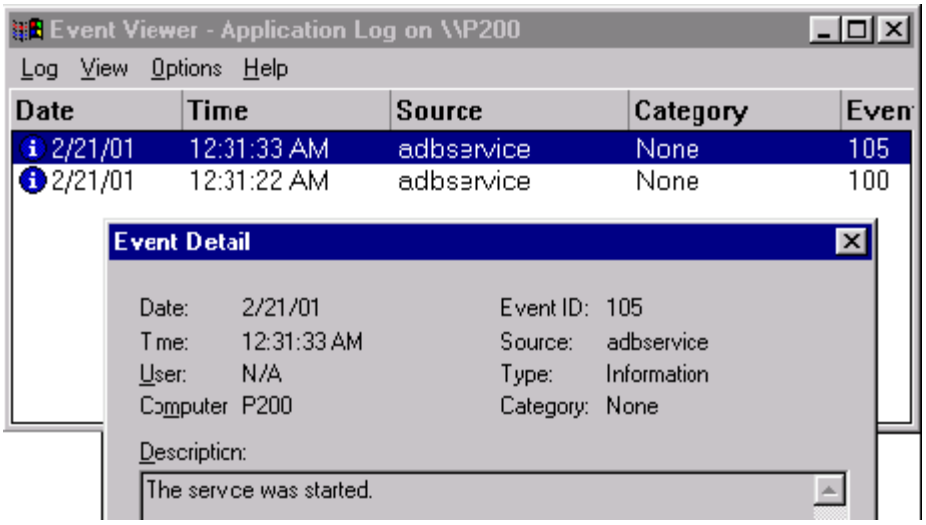


b) The adbservice should then be started by clicking on Start on the Services dialog.

c) The status of the adbservice can be monitored from the Event Viewer dialog (Programs -> Administrative Tools (Common) -> Event Viewer -> Application Log. Double-click the adbservice entries to get the status.



d) To stop the adbservice, use the Services dialog and press the Stop button. There is a known bug that often causes Window to report that it is unable to stop the service. This error message can be ignored. Exiting and re-entering the Services dialog will confirm that the Service has been stopped.

e) To check the install status of the adbservice, open an MS DOS / Console Window and change to <INSTALLDIR>. Then issue the command:

adbservice -v

Note: *If any changes are made to the* ***database.txt*** *file, the adbservice must be stopped and re-started for the changes to take effect.*

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The adbservice is setup to start automatically whenever the Windows platform is booted. There is no need for any user to be logged-in to the system.

6. Configuration of ADB on ADC QS

a) Stop ADBservice via Start-Settings-Control Panel-Services (*)

b) Create a database.txt file with the PC configuration tool (GUI tool). Use the definition file adc-img.def.

c) Modify the Archive destination(s) (in the cpf file, USE CCM tool) to connect to the local host.

  c.1) Configure the archive destination in the application table with the IP address of the QS

  c.2) Give them the port used for communication between QS and ADB (recommendation : higher than 5000).

  c.3) Modify also the AS in the devices table.

  c.4) Delete all AS from the network table.

d) Import the new CPF file

e) Reboot the workstation.

(*) The ADBservice startup must be on “automatic” so that it restarts every time you reboot the system.

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Configuration Viewer Software

User Manual

Draft - based on software 2.1.16

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Chapter 1

Introducing the Configuration Viewer Software

This chapter covers the following topics:

- Configuration Viewer Software features
- Intended use of the Configuration Viewer Software (Server/Client)
- Starting the Configuration Viewer Software
- The user interface
- Using the Configuration Viewer Software Help
- Using the Configuration Viewer Software tree pane
- Using the Configuration Viewer Software detail pane
- Opening the layout editor (Print Software)
- Opening the Text Box Editor (Print Software)
- Synchronizing Medical/NT Printers
- Agfa Dicom Bridge
- Changing the server
- Quitting the Configuration Viewer Software
- Study types - Terminology
- Devices - terminology

Configuration Viewer Software features

- The Configuration Viewer Software is a tool which enables you to configure your whole ADC QS System.

  It permits:

  - Configuring the study groups, study types, substudy types and exposure types you will use;
  - Configuring and adding the devices that will be integrated in the ADC QS cluster; you can easily install new hardware devices using the wizard functions.
  - Entering various information (site information, general Computed Radiology settings);
  - Performing Windows NT administrator tasks such as creating new users and changing the system settings, tailored for your ADC QS System.
  - Adding and deleting ADC QS licenses
  - Consulting tasks
  - Accessing the ADC QS Quality Monitoring tools such as the ADC QS Auto QC and the ADC QS Dose Monitoring Software.
  - Finetuning the image processing parameters that you use for your examinations.
  - Linking layouts to substudy types, which enables you to reduce the film usage.

- The Configuration Viewer Software is delivered with a standard configuration, with a number of study groups, study types, substudy types and exposure types.

- The graphical user interface helps you to have a clear overview over the whole configuration of your system. A help pane guides you through every step of the configuration process.

Intended use of the Configuration Viewer Software (Server/Client)

The Configuration Viewer Software has both a Windows NT Server and a Windows NT Client version. Both versions are aimed at different users.

Configuration Viewer Software - Server

The server version of the Configuration Viewer Software is used to perform the initial installation and configuration of the ADC QS network, which is done once by an Agfa service engineer.

After the installation the Windows NT Server Configuration Viewer Software remains accessible only for the service engineer.

Configuration Viewer Software - Client

The client version of the Configuration Viewer Software can be used by the system administrator on the site.

In a real-life situation the administrator will use the Configuration Viewer Software to modify the basic configuration performed by the service engineer.

To use the Configuration Viewer Software, there are a number of practical prerequisites:

- The user should have a thorough knowledge of computer networking.
- If help is needed, the user should contact the IT Department of the site or the Agfa service engineer.

Be careful: configuration actions performed on any ADC QS station (whether it is a server or a client) always have an impact on the whole ADC QS system.

Starting the Configuration Viewer Software

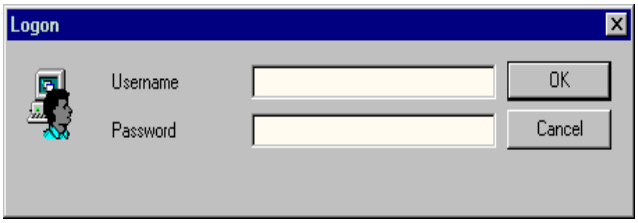
To start the Configuration Viewer Software:

1 Do one of the following:

- Double-click the ADC QS icon.

- Click the Start button, and then point to Agfa. Point to the ADC QS folder, and then click Configuration.

The Login dialog box is displayed.

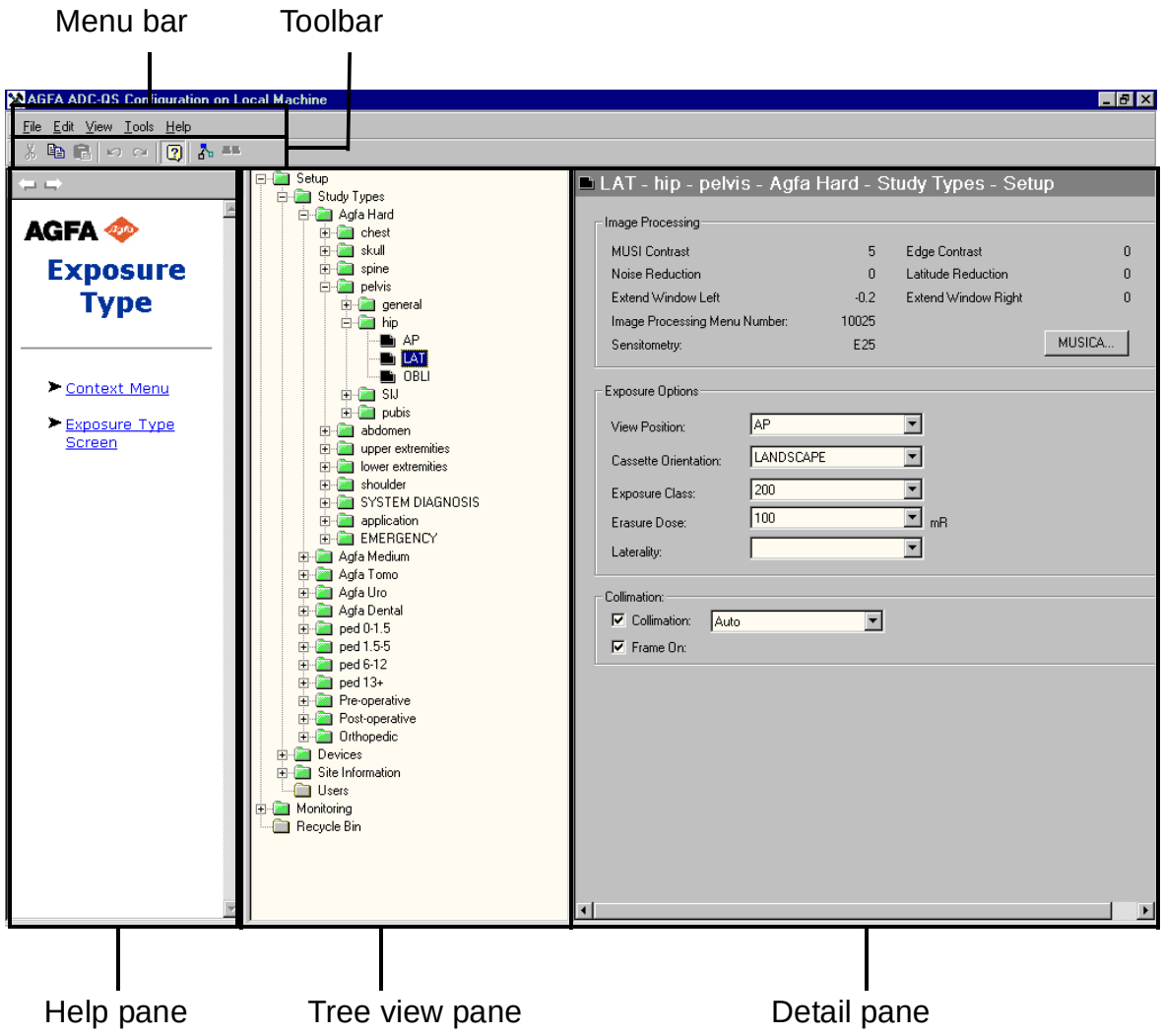


2 Type a valid user name and password and click OK.

The ADC Quality System is started.

The user interface

The Configuration Viewer Software is composed of three panes (the Help pane, the Tree view pane and the Detail pane), a menu bar and a toolbar:



Explanation:

Item	Explanation
The help pane	The Help pane of the Configuration Viewer Software provides context-sensitive help. When you click a folder in the Tree view pane, a help page containing procedures about this folder will automatically appear in the Help pane. Refer to *'Using the Configuration Viewer Software Help'* on page *11*.
The Tree view pane	In the Tree view pane, you can perform actions such as moving, deleting, changing the name of study types, devices, etc... Refer to *'Using the Configuration Viewer Software tree pane'* on page *13*.
The detail pane	The detail pane displays the configuration parameters of an item selected in the Tree view pane. Refer to *'Using the Configuration Viewer Software detail pane'* on page *15*.
The menu bar:	Using the menu bar you have access to a number of configuration actions as well as a number of optional tools and the help function.
The toolbar	The toolbar contains buttons and commands for commonly used tasks.

Using the Configuration Viewer Software Help

You can invoke Help on the functions of the Configuration Viewer Software. You can choose between:

- Help on the Configuration Viewer Software (in the Help pane).
- Help on the global ADC Quality System (Global Help).

Using the context-sensitive help

The Help pane of the Configuration Viewer Software provides context-sensitive help. When you click a folder in the Tree view pane, a help page containing information about this folder will appear in the Help pane.

You can choose to show or hide this pane. You can also browse through the pages using the arrows in the top frame of the help pane.

In preparation

To show/hide the help pane:

On the **View** menu, click **Help pane**.

To browse through the different pages in the Help pane:

Click the left and right arrows on top of the Help pane:

In preparation

Using the Global Help

The Global Help groups the help files for all main ADC QS modules (IPD Viewer Software, Configuration Viewer Software, ID Viewer Software and QC Viewer Software) for which you have a license. The Global Help permits you to quickly and easily locate information; it has a table of contents, an index, a full-text search function, and a favorites function via which you can define favorite topics.

You can open and close this Global Help at any time.

In preparation

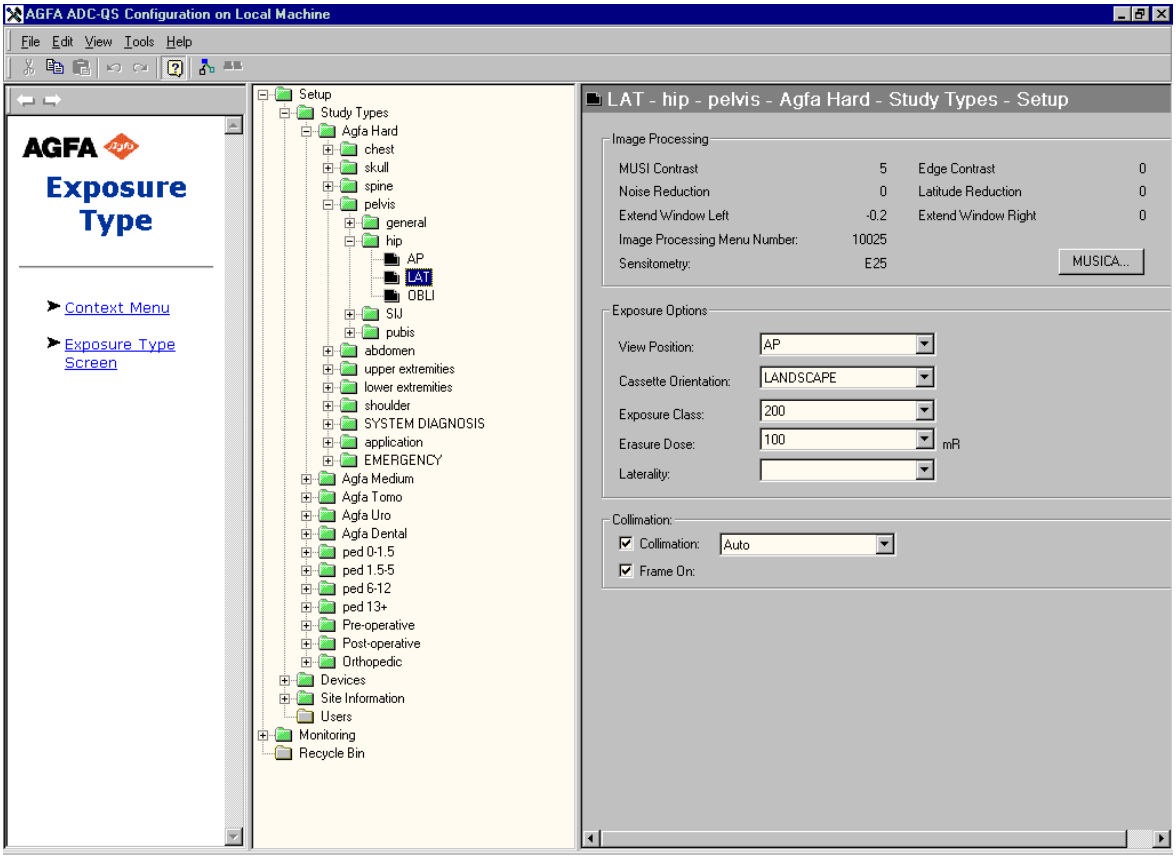
To open the Global Help:

On the **Help** menu, click **Global Help** or **Configuration Viewer help.**

The Global Help System will be opened.

Using the Configuration Viewer Software tree pane

The Tree view pane contains all setup, monitoring and service items of the Configuration Viewer Software in a directory structure.



Using the Configuration Viewer Software Tree pane, you can perform the following configuration functions:

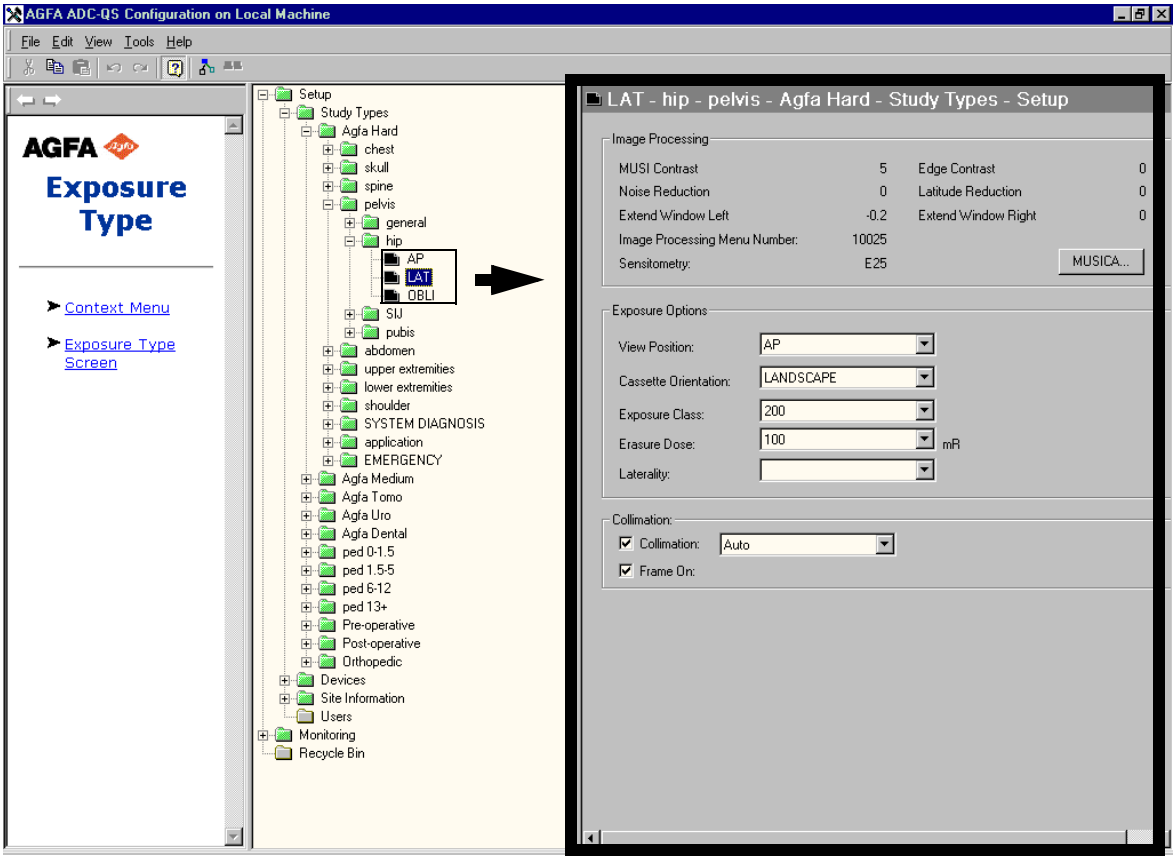
To	Do this
Configure study types and the underlying study groups, study types, substudy types and exposure types	Refer to *'Configuring study types'* on page *32*.
Configure the devices in the ADC QS cluster (gateway, ID Viewers, Digitizers, Medical Printers, Destinations)	Refer to *'Configuring devices'* on page *58*.
Modify the site information (administration, CR Settings, System Settings)	Refer to *'Consulting and modifying site information'* on page *102*.

To	Do this
Configure users	Refer to *'Configuring users'* on page *113*.
Monitor quality	Refer to *'Monitoring'* on page *116*.
Manage software licenses	Refer to *'Software management'* on page *117*.
Manage tasks	Refer to *'Task Management'* on page *122*.

Using the Configuration Viewer Software detail pane

The detail pane displays the configuration parameters of an item selected in the Tree view pane.

Example: when you select an exposure type such as LAT in the Tree view pane, the details of this exposure type will appear in the Detail pane:



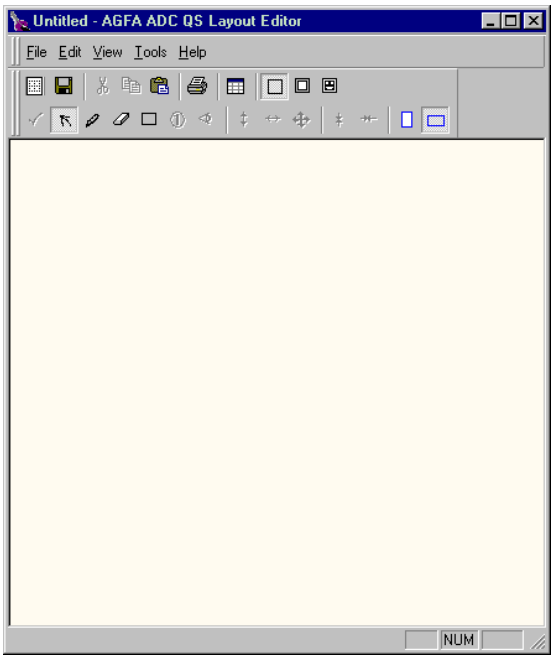
Opening the layout editor (Print Software)

From the Configuration Viewer Software, you can easily call up the Layout editor (if you have a license for the Smart Print Software). This allows you to define additional layouts independent from the actual examination.

To switch from the Configuration Viewer Software to the Layout editor:

On the **Tools** menu, click **Layout Editor**.

The main window of the Layout editor is displayed:



For more information, refer to the Print Software reference and user manual.

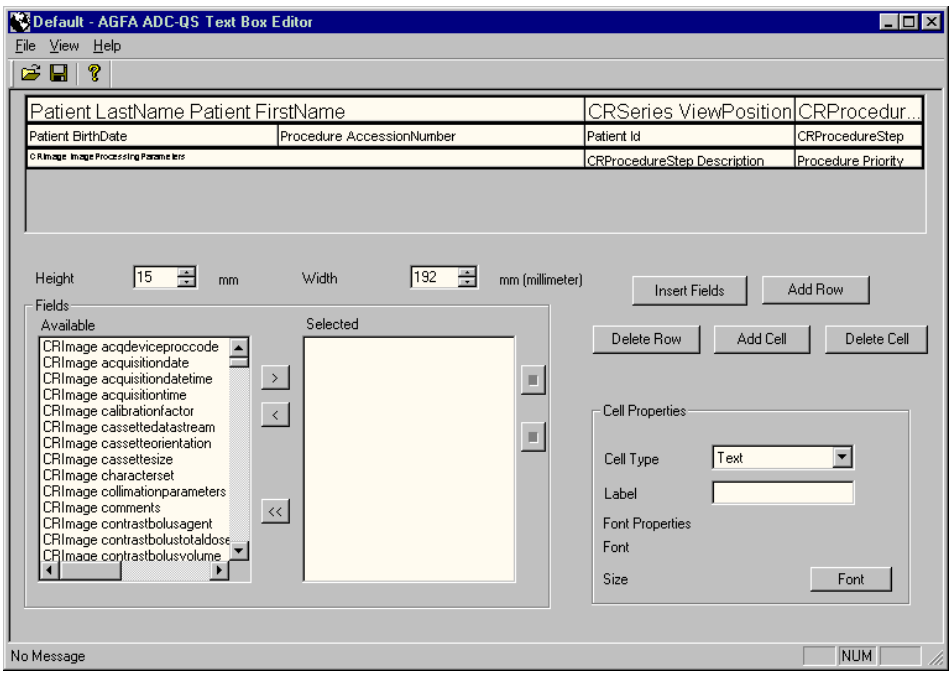
Opening the Text Box Editor (Print Software)

From the Configuration Viewer Software, you can easily call up the Text Box editor (if you have a license for the Smart Print Software). This allows you to define text boxes independent from the actual examination.

To switch from the Configuration Viewer Software to the Text Box editor:

On the **Tools** menu, click **Text Box Editor**.

The main window of the Text Box editor is displayed:



For more information, refer to the Print Software reference and user manual.

Synchronizing Medical/NT Printers

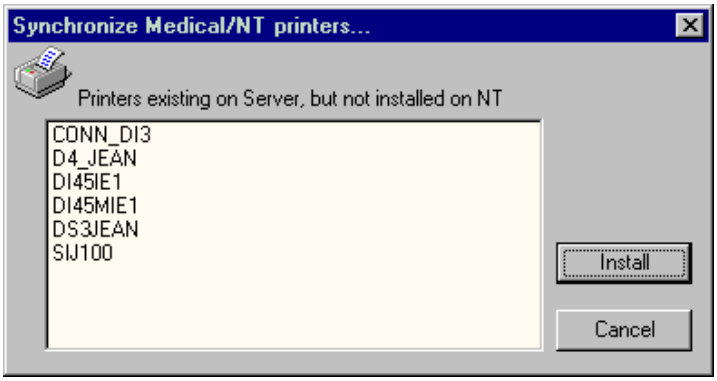
The Synchronize Medical/NT printers function allows you to synchronize the printers which have been installed on the Server and the actual client on which you are working.

To synchronize the printers:

1 On the menu bar, click **Tools**.

2 Click Synchronize Medical/NT Printers.

The list of printers which have been configured on the server, but are not yet configured for the client will appear:



3 Click Install to install the printers on the client or click Cancel.

Agfa Dicom Bridge

In preparation

Changing the server

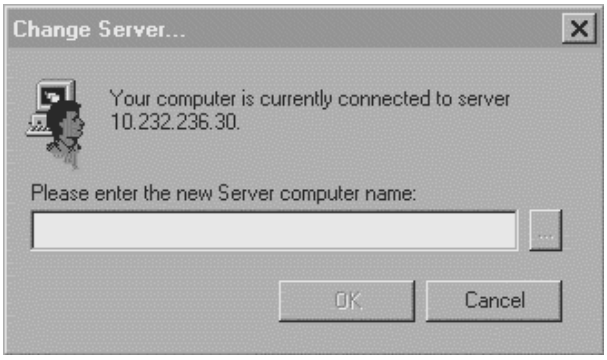
The Change Server function allows you to change the server of the particular client.

To change the server of a particular client:

1 On the menu bar, click **Tools**.

2 Click Change Server.

The Change Server window will appear, showing the server to which your computer is currently connected:



3 Enter the new Server name or click the Browse button to select a name from the list.

4 Click OK to change the server or click Cancel.

Quitting the Configuration Viewer Software

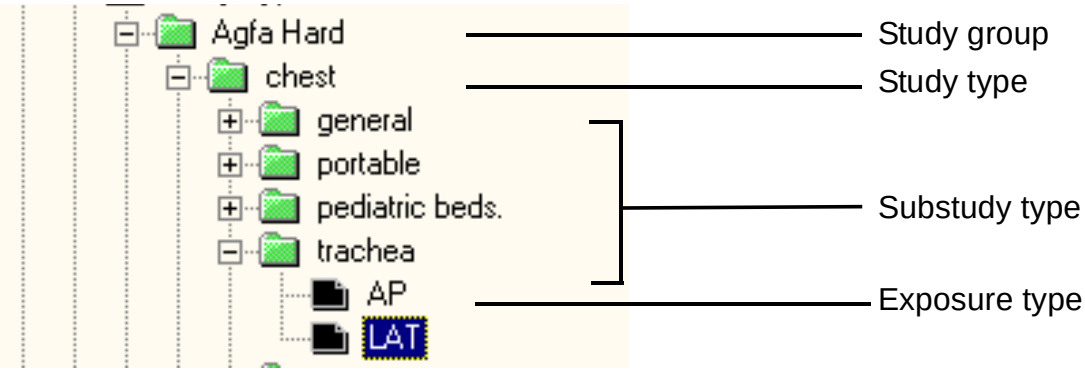
To quit the Configuration Viewer Software:

On the **File** menu, click **Exit**.

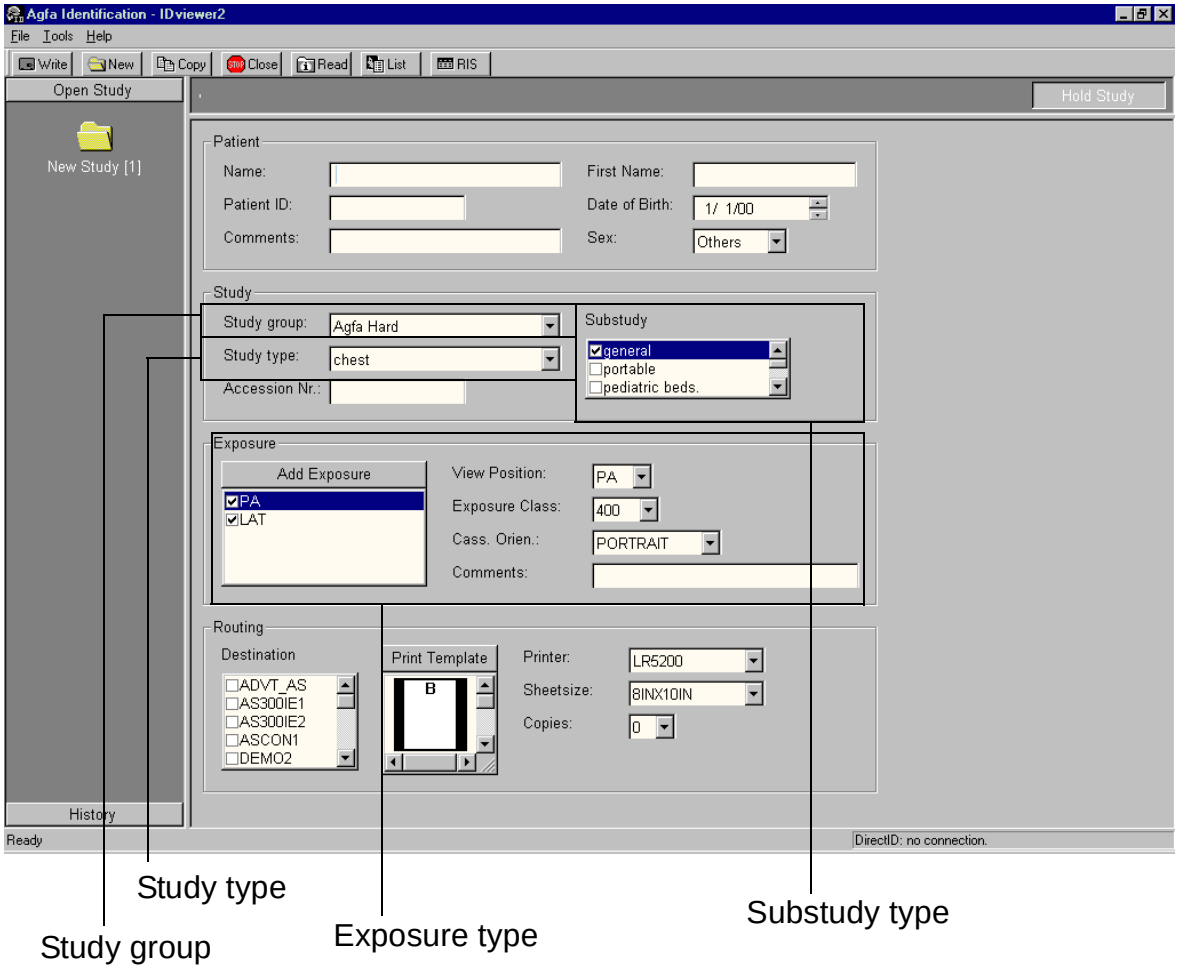
The Configuration Viewer Software is closed.

Study types - Terminology

For a clear understanding, the terms study, study group, substudy and exposure type are crucial, as these concepts link both the Configuration Viewer Software and the ID Viewer Software.



Only the study groups, substudy groups and exposure types which you have configured appear in the Identification screen of the ID Software:



An examination of a patient comprises a number of images (a 'study'). Each study has a number of predefined characteristics and settings, depending on the type of examination:

Study: A study is the group of image runs making up the examination of one patient.		
Study Group: A functional collection of Study types.	On this level, there is nothing to configure. You can create, rename and delete study groups. By default, a number of study groups are configured at installation.	Refer to *'Study group'* on page *24*.
Study type: A collection of Substudy types which have a number of common parameters (a default hold status and common destinations).	In the Detail pane, you can configure the parameters for the individual study types selected in the tree. These parameters will be applied on all substudy types of the selected study type.	Refer to *'Study type'* on page *25*.
Substudy type: A collection of Exposure types which is by default linked to a defined body part and printing template.	You can configure the parameters of individual substudy types selected in the tree. These parameters will be applied on all exposure types of the selected substudy type.	Refer to *'Substudy type'* on page *26*.
Exposure type: A set of parameters (concerning image processing, exposure options such as view position and cassette orientation and collimation) which are by default used for a defined type of exposure.	You can configure the parameters of individual exposure types selected in the tree.	Refer to *'Exposure type'* on page *27*.

Study group

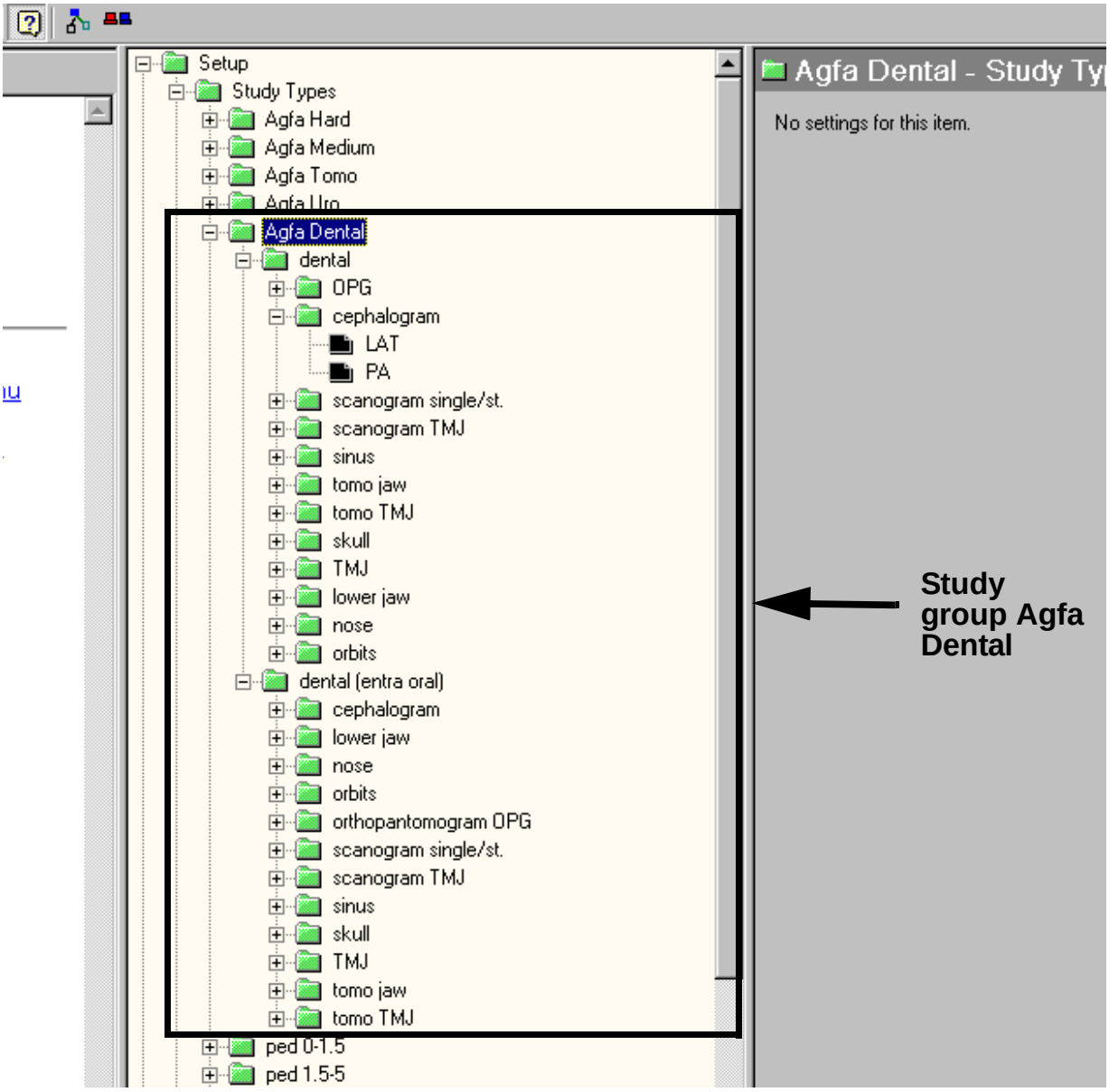
A Study group is a functional collection of Study types.

Example:

You can configure a Study group per medical department (orthopedic, dental, pediatric), or e.g. per age group (pediatric 0-1.5, pediatric 1.5-5,...).

Example screenshot:

The Study group **Dental** consists of two Study types (**Dental** and **Entra oral**), which on their turn consist of a number of Substudy types (**Cephalogram**, **Lower jaw**, etc.). For all these Substudy types, a number of Exposure types (**LAT**, **PA,...**) are configured:



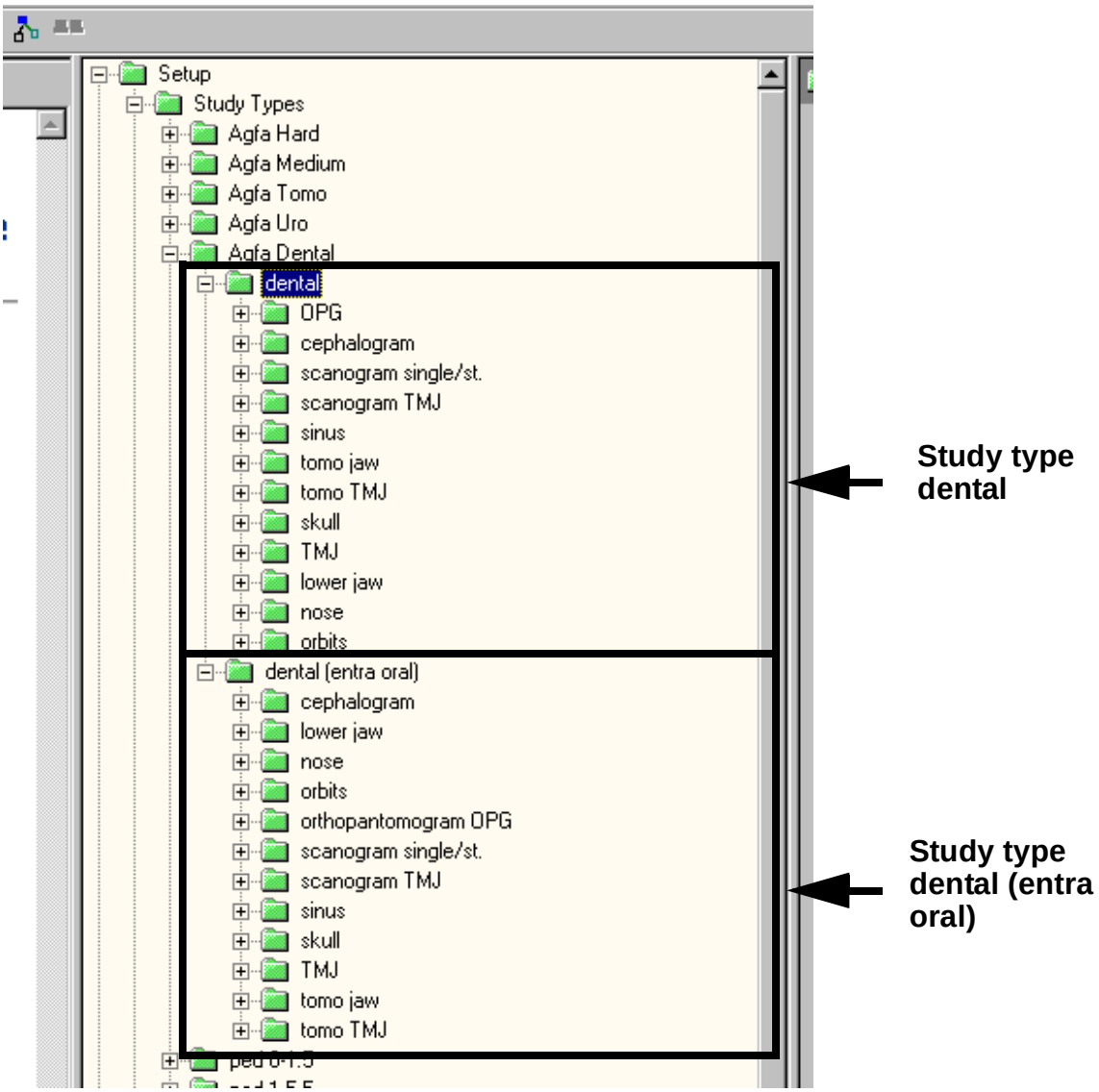
Study type

A Study type is a functional collection of Substudy types which have a number of common parameters (a default hold status and common destinations).

A number of Study types make up a Study group.

Example screenshot:

The Study types **Dental** and **Dental (entra oral)** (which each have a number of substudy types) make up the study group **Agfa Dental**:



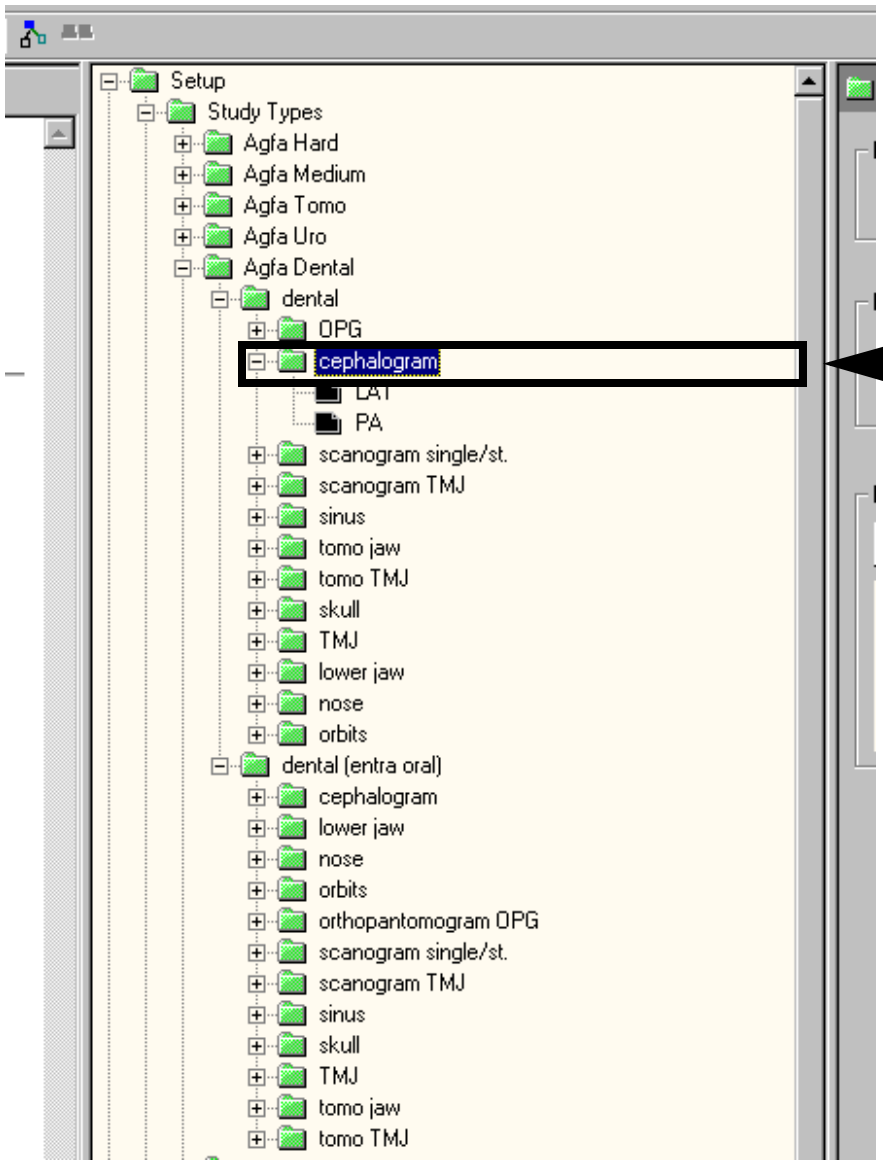
Substudy type

A Substudy type is a collection of Exposure types which is by default linked to a defined body part and printing template.

A number of Substudy types make up a Study type.

Example screenshot:

In the default configuration **Cephalogram** is one of the Substudy types of the Study type **Dental** which is part of the Study group **Agfa Dental**:



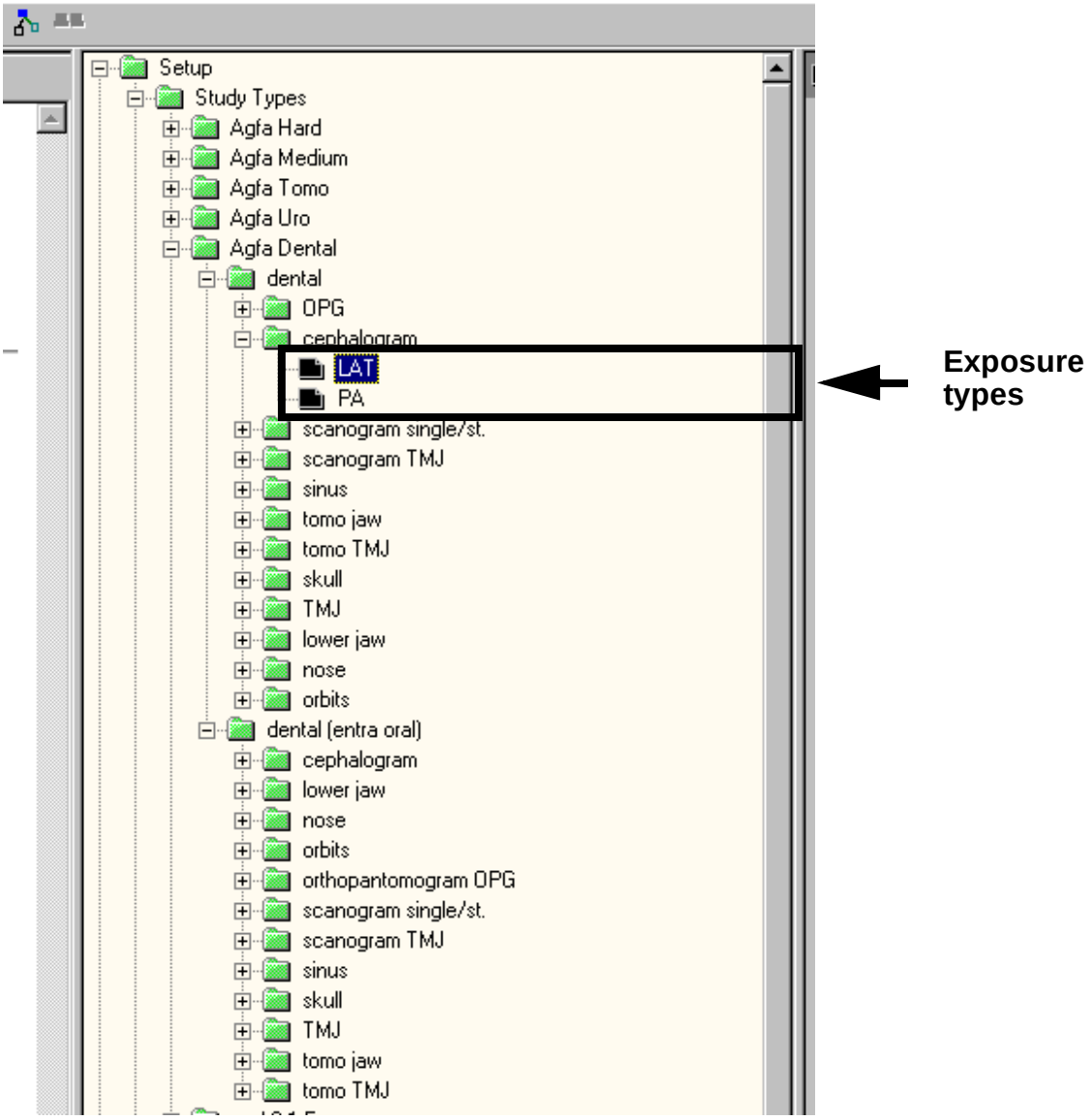
Exposure type

An Exposure type is a set of parameters (concerning image processing, exposure options such as view position and cassette orientation, and collimation) which are by default used for a defined type of exposure.

A number of Exposure types make up a Substudy type.

Example screenshot:

PA and **LAT** make up the Substudy type **Cephalogram** of the Study type **Dental** in the default configuration.

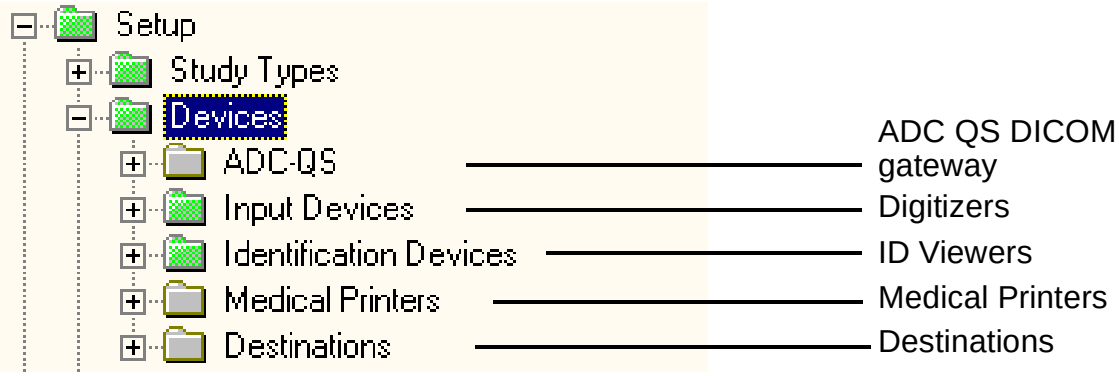


Devices - terminology

The Devices folder of the Configuration Viewer Software covers the installation and configuration of all the I/O devices that make up the ADC QS System:

- Digitizers
- ID Viewers
- Medical printers
- Destinations

❖ ***For the installation of other devices, you can use the Windows NT® Control panel.***



You can use the Configuration Viewer Software to configure, add, remove the following devices from the ADC QS Cluster:

DICOM gateway	The DICOM gateway is the Dicom input port on the server of the ADC QS cluster which enables the server to ‘load’ the images.
Digitizers	The Digitizer scans the exposed ADC image plate, converts the information into digital data and automatically transfers the image to the image processing station for further processing and visualization. For more information on the use of the Digitizers, refer to the Digitizer manuals

ID Viewers	The ID Station allows you to link the patient demographic data and examination data of an exposure to the corresponding image. For more information on the use of the ID Viewer, refer to the ID Viewer Software manual.
Medical Printers	Printer used to produce diagnostic hardcopies of radiographic images.
Destinations	A destination is a device to which the studies are routed after they have been digitized. In the ADC QS Cluster, three types of destinations are possible: • ADC QS: a destination of this type is a server of an ADC QS network, e.g.. the server of another cluster. • Archive: a destination of this type is a device to which images are routed in order to store all the image parameters. • Softcopy destination: a softcopy destination is a destination to which images are routed to look at them. This destination does only receive a limited number of parameters.

Chapter 2

Using the Setup tool

This chapter covers the following topics:

- Configuring study types
- Configuring devices
- Consulting and modifying site information
- Configuring users

Configuring study types

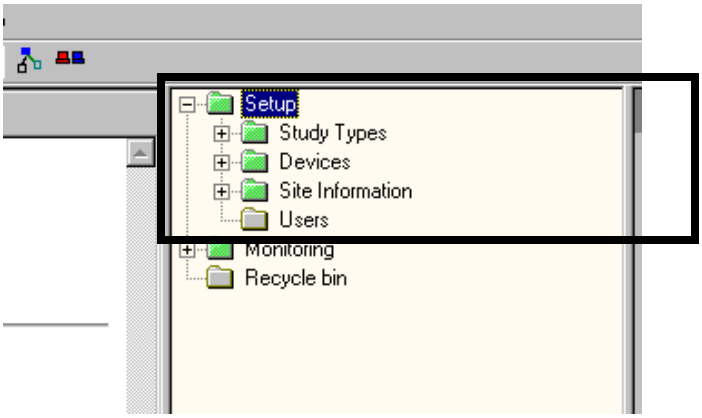
In the Tree pane, you can consult and modify the study type data:

- study group properties
- study type properties
- substudy type properties
- exposure type properties

For more information on the terminology, refer to *'Study types - Terminology'* on page *22*.

To access the Setup folders:

Click the plus sign next to the Setup folder to show the available Setup folders (Study Types, Devices, Site Information and Users):



Configuring study groups

A Study group is a functional collection of Study types.

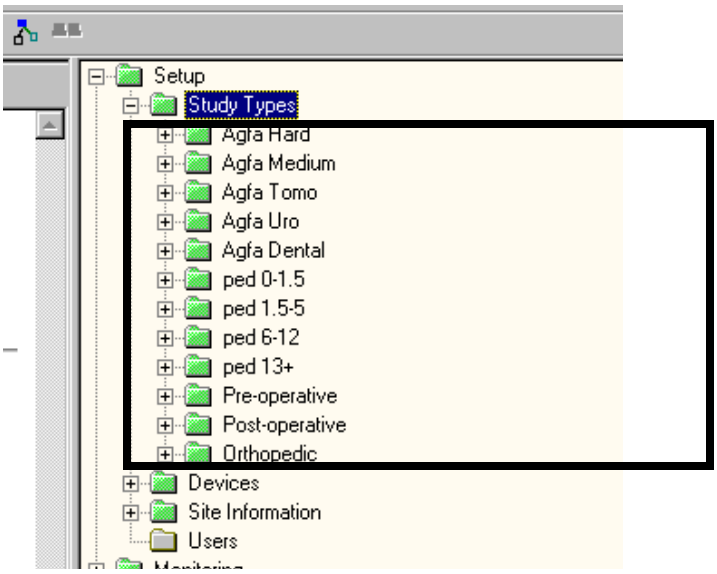
Using the Configuration Viewer Software, you can perform the following actions in order to configure study groups:

- copy, rename, delete study groups and change the position of study groups.

To access the study group folders:

1 Click the plus sign next to the **Setup** folder to show the available Setup folders:

2 In the Setup folder, click the plus sign next to the **Study Types** folder to show the available study groups.



Configuring the list of study groups

You configure the list of study groups by copying, renaming, moving and deleting study groups.

To copy a study group:

1 Click the study group you want to use as source.

2 On the **Edit** menu, click **Copy**.
Alternatively, right-click and select **Copy** or press **CTRL C**.

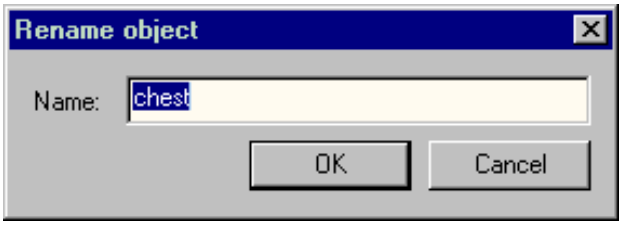
3 Click the destination folder where you want to put the study group.

4 On the **Edit** menu, click **Paste**.
Alternatively, right-click and select **Paste** or press **CTRL V**.

To rename a study group:

1 Click the study group you want to rename.

2 On the **Edit** menu, click **Rename**.
Alternatively, right-click and select **Rename**.
The Rename object window will appear:



3 Enter the new name and click **OK**.

To change the position the study group in the Study Types folder:

1 Click a study group.

2 On the **Edit** menu, click **Move Up** or **Move Down**.
Alternatively, right-click and select **Move Up** or **Move Down**.
The study group will be moved up or down.

To delete a study group:

1 Click the study group you want to delete.

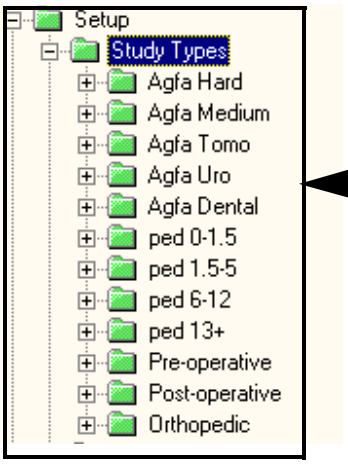
2 On the **Edit** menu, click **Delete**.
Alternatively, right-click and select **Delete**.
The system will ask you to confirm.

3 Click **Yes** to confirm, click **No** to cancel.

Example/Exercise:

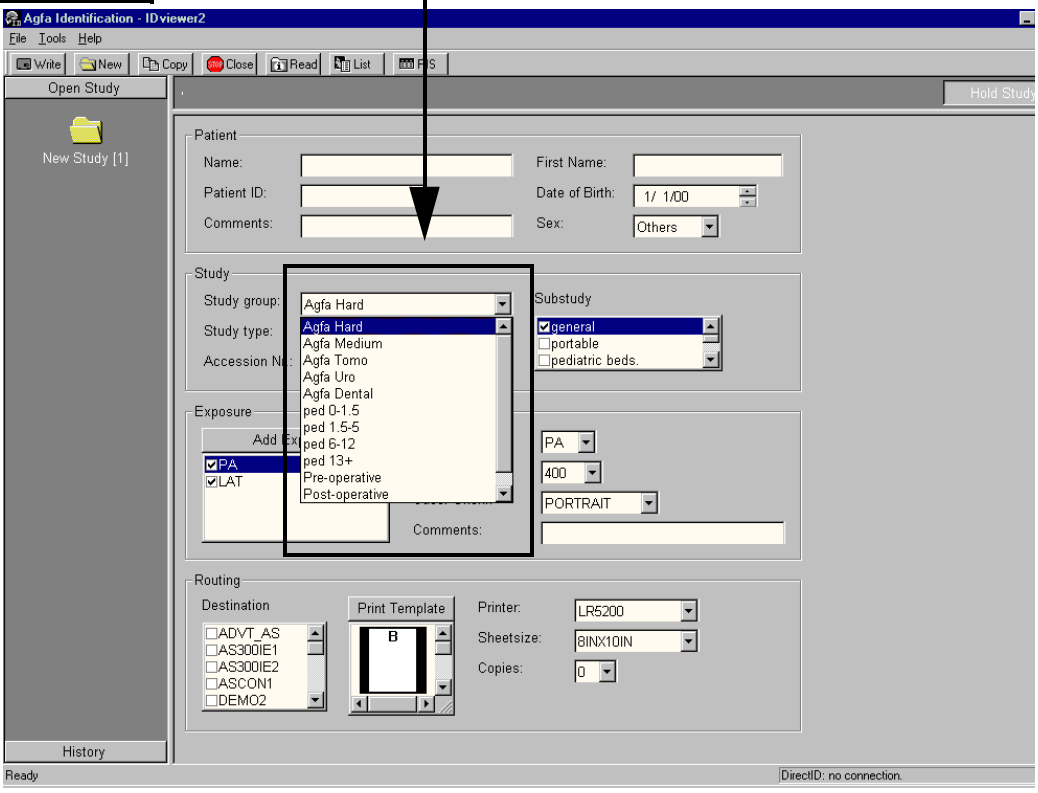
- Create a new study group by copying and pasting an existing study group
- rename it
- move the study group to the top of the list.
- modify specific settings
- Go to the Identification screen of the ID Viewer Software to see the result.

The new study group and its settings will appear in the study group list of the Identification Screen of the ID Viewer Software. As the order of the list in the Configuration Viewer Software corresponds with the list in the ID Viewer Software, the newly created study group will appear on top of the list.



Configuration Viewer Software
Tree view pane

ID Viewer Software
Identification window



Configuring study types

A Study type is a collection of Substudy types which have a number of common parameters (a default hold status and common destinations).

A number of Study types make up a Study group.

Using the Configuration Viewer Software, you can perform the following actions in order to configure study types:

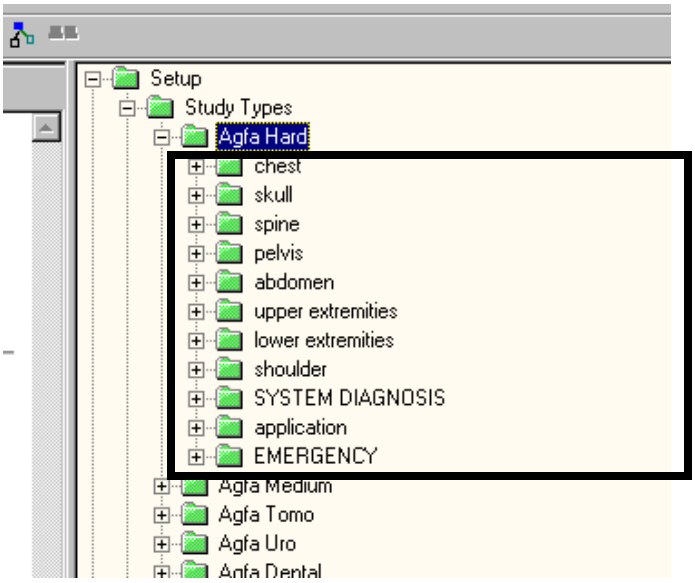
- Copy, rename, delete study types and change the position of study types.
- Modify properties of individual study types.

To access the study type folders of a study group:

1 Click the plus sign next to the Setup folder to show the available Setup folders (Study Types, Devices, Site Information and Users).

2 Click the plus sign next to the Study Types folder to show the available study groups.

3 Click the plus sign next to a study group folder to show the available study types of that particular study group:



Configuring the lists of study types

You can configure the lists of study types by copying, renaming, deleting and changing the position of study types.

To copy a study type:

1 Click the study type you want use as source.

2 On the **Edit** menu, click **Copy**.
Alternatively, right-click and select **Copy** or press **CTRL C**.

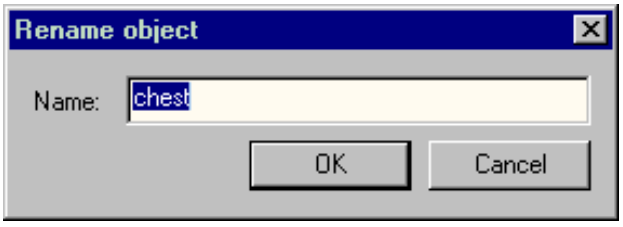
3 Click the destination folder where you want to put the study type.

4 On the **Edit** menu, click **Paste**.
Alternatively, right-click and select **Paste** or press **CTRL V**.

To rename a study type:

1 Click the study type you want to rename.

2 On the **Edit** menu, click **Rename**.
Alternatively, right-click and select **Rename**.
The Rename object window will appear:



3 Enter the new name and click **OK**.

To change the position the study type in the study group folder:

1 Click a study type.

2 On the **Edit** menu, click **Move Up** or **Move Down**.
Alternatively, right-click and select **Move Up** or **Move Down**.
The study type will be moved up or down.

To delete a study type:

1 Click the study type you want to delete.

2 On the **Edit** menu, click **Delete**.

Alternatively, right-click and select **Delete**.

The system will ask you to confirm.

3 Click **Yes** to confirm, click **No** to cancel.

Make sure not to delete the study type System Diagnosis which is part of the study group Agfa Hard. This study type is used by the Auto QC Software when performing quality monitoring operations.

Modifying the properties of individual study types

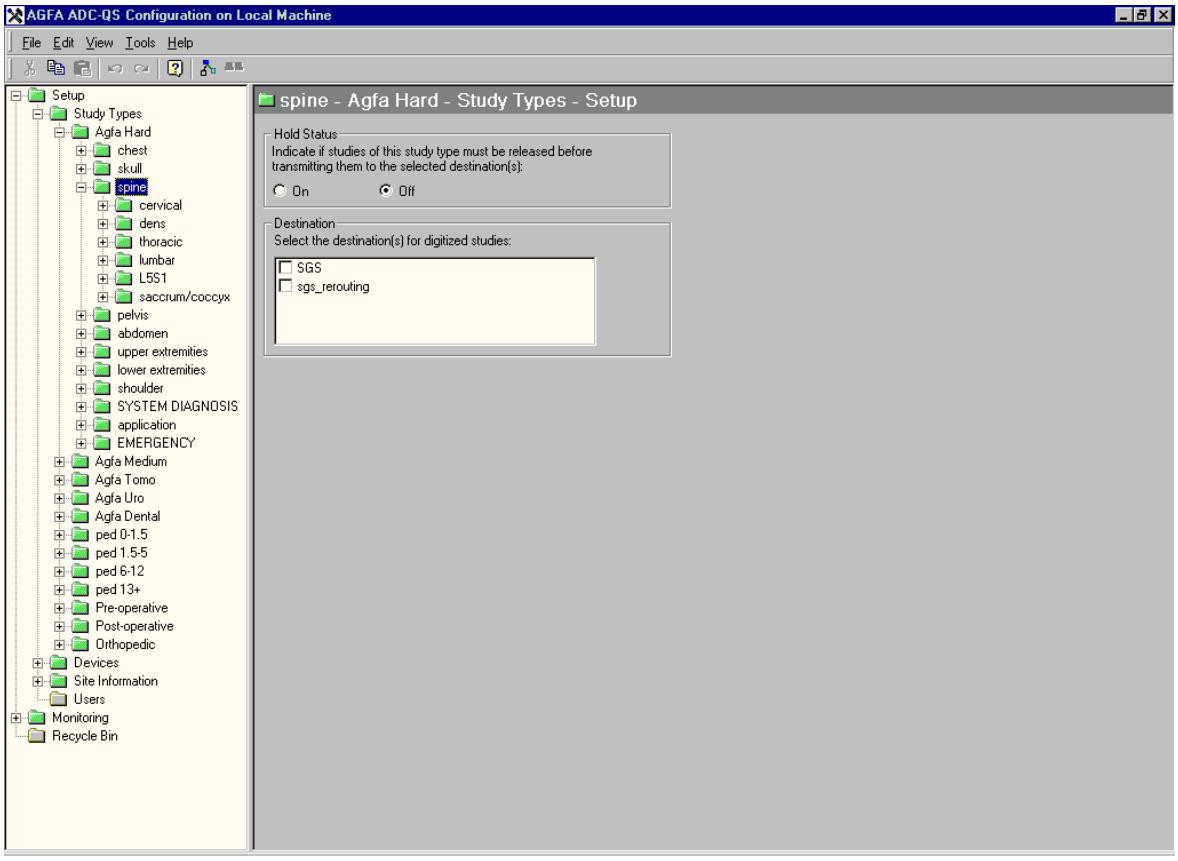
Using the Configuration Viewer Software, you can enter a number of default settings for each individual study type:

- Put studies by default on hold before they are transmitted to their destination,
- Select the default destination(s) for the digitized studies,

To modify study type properties:

1 In the Tree view pane, open a study group folder and select a study type.

The Detail pane will display the configuration parameters of the selected study type:



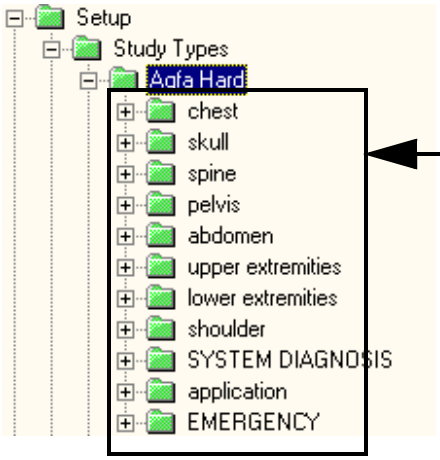
2 Choose one or more of the following actions:

To	Do this
Change the hold status	• Click **On** to manually release studies of this study type before they are transmitted to the selected destinations. • Click **Off** to automatically release a study to the selected destinations if it is complete.
Select one or more destination(s)	Tick one or more destinations in the list to transmit studies of this study type to after they have been digitized.

Example/Exercise:

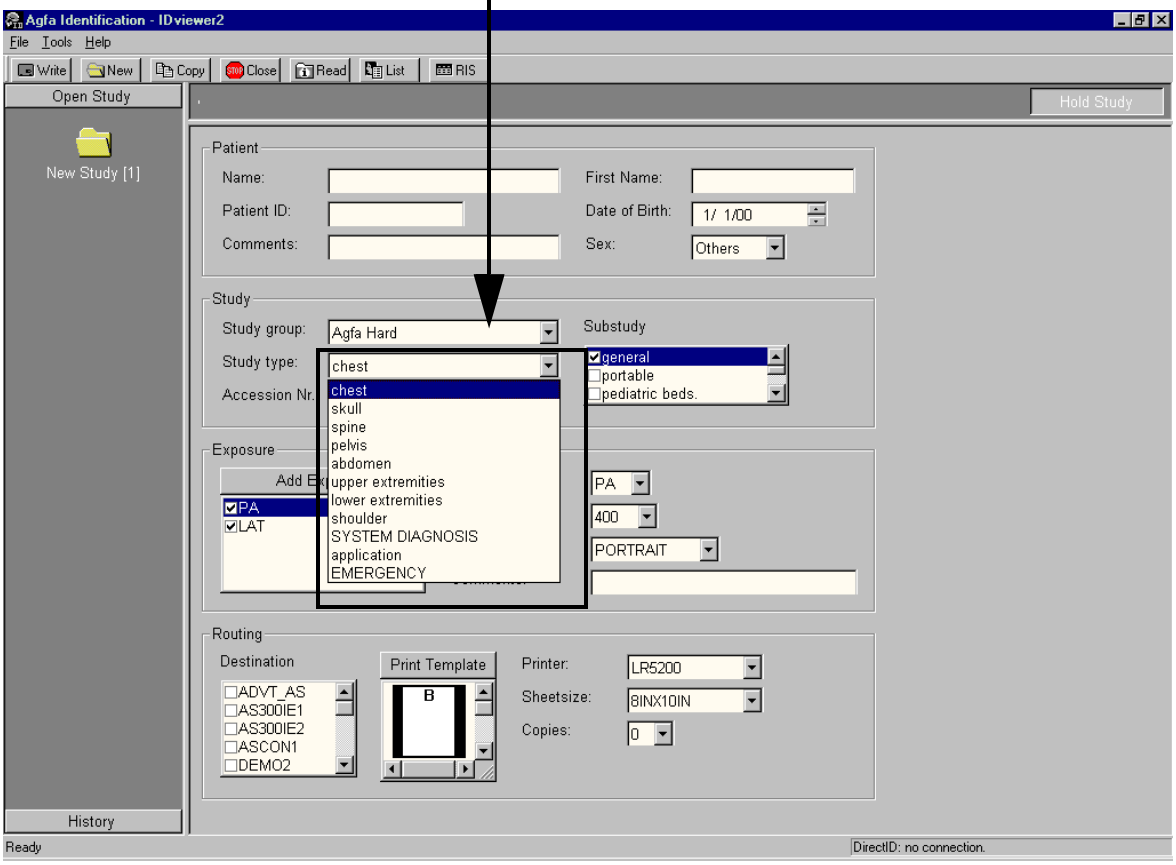
- Copy a study type folder to another study group
- Rename it.
- Move the study type to the bottom of the list
- Modify a number of parameters.
- Delete or add a number of substudy types.
- Go to the Identification Screen of the ID Viewer Software to see the result.

The new study type and its settings will appear in the study type list of the Identification Screen of the ID Viewer Software. As the order of the list in the Configuration Viewer Software corresponds with the order of the list in the ID Viewer Software, the newly created study type will appear at the bottom of the list.



Configuration Viewer Software
Tree view pane

ID Viewer Software
Identification window



Configuring substudy types

A Substudy type is a collection of Exposure types which is by default linked to a defined body part and printing template.

A number of Substudy types make up a Study type.

Using the Configuration Viewer Software, you can perform the following actions in order to configure substudy types:

- Copy, rename, delete substudy types and change the position of substudy types.
- Modify substudy type properties.
- Edit the body parts list.

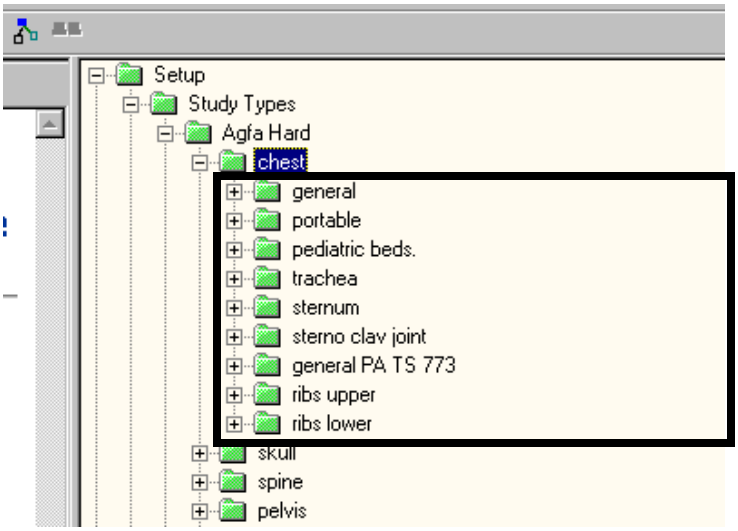
To access the substudy type folders of a study type:

1 Click the plus sign next to the Setup folder to show the available Setup folders (Study Types, Devices, Site Information and Users).

2 Click the plus sign next to the Study Types folder to show the available study groups.

3 Click the plus sign next to a study group folder to show the available study types of that particular study group.

4 Click the plus sign next to a study type folder to show the available substudy types of that particular study type:



Configuring the lists of substudy types

You can configure the lists of substudy types by copying, renaming and deleting substudy types from the tree view.

To copy a substudy type:

1 Click the substudy type you want to use as source.

2 On the **Edit** menu, click **Copy**.
Alternatively, right-click and select **Copy** or press **CTRL C**.

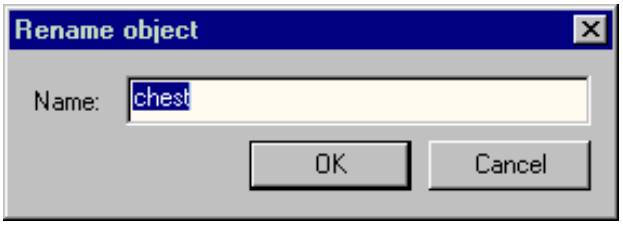
3 Click the destination folder where you want to put the substudy type.

4 On the **Edit** menu, click **Paste**.
Alternatively, right-click and select **Paste** or press **CTRL V**.

To rename a substudy type:

1 Click the substudy type you want to rename.

2 On the **Edit** menu, click **Rename**.
Alternatively, right-click and select **Rename**.
The Rename object window will appear:



3 Enter the new name and click **OK**.

To change the position the substudy type in a study type folder:

1 Click a substudy type.

2 On the **Edit** menu, click **Move Up** or **Move Down**.
Alternatively, right-click and select **Move Up** or **Move Down**.
The substudy type will be moved up or down.

To delete a substudy type:

1 Click the substudy type you want to delete.

2 On the **Edit** menu, click **Delete**.
Alternatively, right-click and select **Delete**.
The system will ask you to confirm.

3 Click **Yes** to confirm, click **No** to cancel.

Make sure not to delete the substudy types LDS/Agfa CR Spatial and LDS/Agfa CR Contrast which are part of the study type System Diagnosis. These substudy types are used by the Auto QC Software when performing the Spatial and Contrast quality monitoring operations.

Modifying properties of individual substudy types

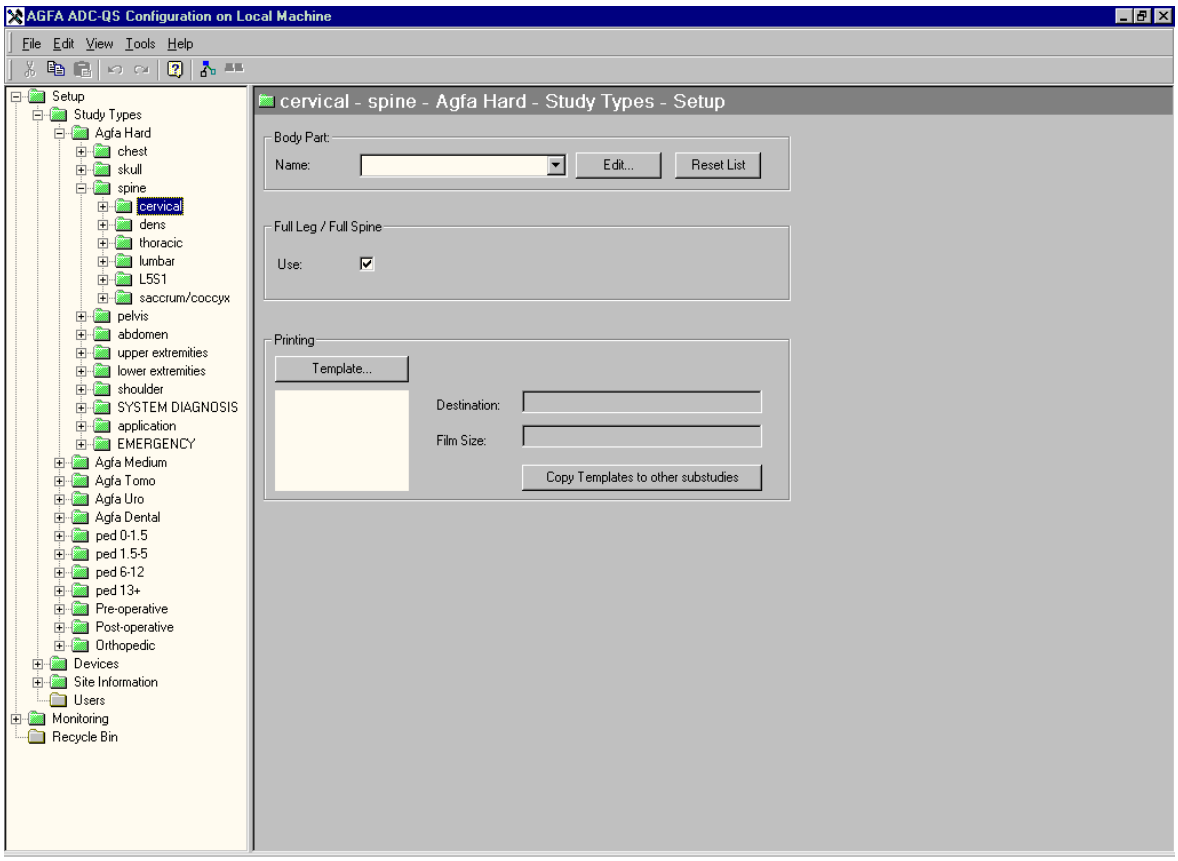
Using the Configuration Viewer Software, you can enter a number of default settings for each individual substudy type:

- associate a DICOM body part with studies of the particular substudy type,
- create a custom DICOM body part
- mark a substudy type as Full Leg/Full Spine
- change the default print template or its attributes for studies of this substudy type.
- select the default printer on which you want to print studies of this substudy type.
- select the default film size to use for printing studies of this substudy type

To modify substudy type properties:

1 Open a study type folder in the Tree View pane and select a substudy type.

The Detail pane will display the configuration parameters of the selected substudy type:



2 Choose one or more of the following actions:

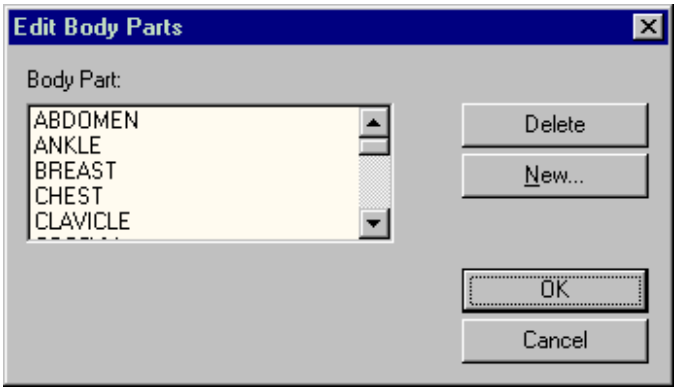
To	Do this
Associate a DICOM body part with studies of the particular substudy type	**1** Select a name of a body part from the drop down list. **2** To edit the body part list and to create a custom DICOM body part list for this substudy type, click edit. The Edit Body Parts dialog is displayed. Refer to *'Modifying the body parts list'* on page *47*. **3** To reload the factory delivered DICOM body part list, click Reset List.
Activate the Full leg spine Software for this type of substudy type	**1** Select the Use full leg spine checkbox. When a study of this substudy type is processed at the QC Viewer station, you will be able to select the Full Leg/Spine software in order to stitch the images of that particular study.
Change the default print template or its attributes (destination and film size)	**1** Click Template. The Print Composer will be opened. Refer to the Reference Manual of the Print Software (Print Composer) to select a print template. **2** Select a template from the list view. If the template contains more than 1 sheet, click on the scroll bar to see the other sheets.

Modifying the body parts list

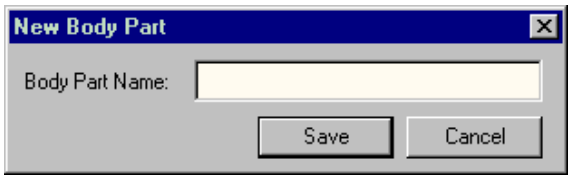
To modify the Body Parts list:

1 In the substudy type window, click **Edit** next to the Body Part name drop down box.

The Edit body parts list will appear:



2 Choose one of the following actions:

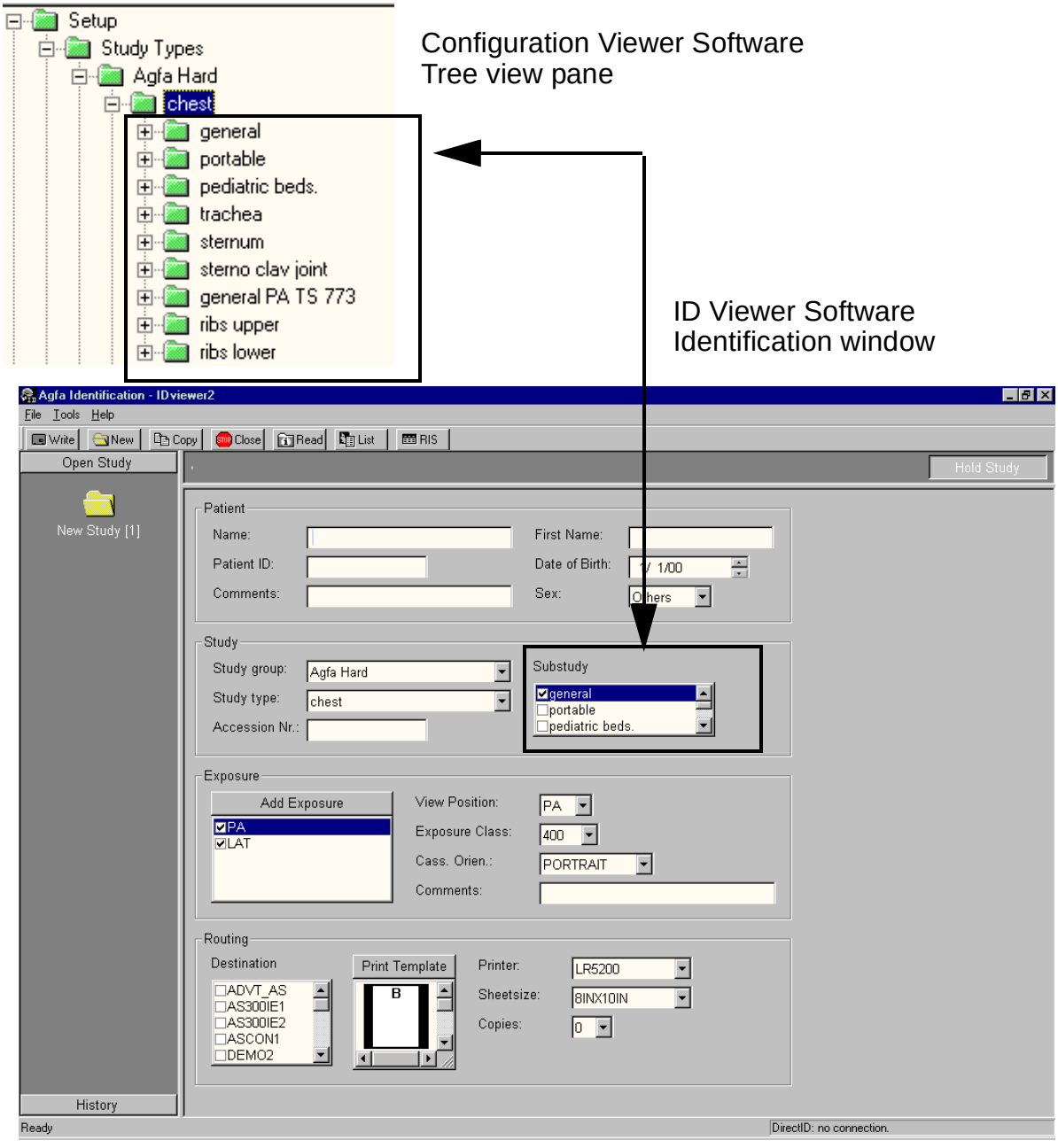
To	Do this
Delete a body part from the list	**1** Select a DICOM body part in the list view. **2** Click **Delete**. The system will ask you to confirm. **3** Click **Yes** to confirm, click **No** to cancel.
Add a new body part to the list	**1** Click **New**. The New Body Part window appears:  **2** Enter the name of the body part. **3** Click Save or **Cancel**.

3 Click **OK** or **Cancel**.

Example/Exercise:

- Copy a substudy type to a study type folder of another or the same study group.
- Modify the substudy parameters
- Add new exposure types
- Go to the Identification screen of the ID Viewer Software to see the result.

The substudy types and their settings will appear in the study type list of the Identification Screen of the ID Viewer Software:



Configuring exposure types

An Exposure type is a set of parameters (concerning image processing, exposure options such as view position and cassette orientation, and collimation) which are by default used for a defined type of exposure.

A number of Exposure types make up a Substudy type.

Using the Configuration Viewer Software, you can perform the following actions in order to configure exposure types:

- rename, copy, move up and down and delete exposure types.
- Modify exposure type properties.

To open the exposure types of a substudy type:

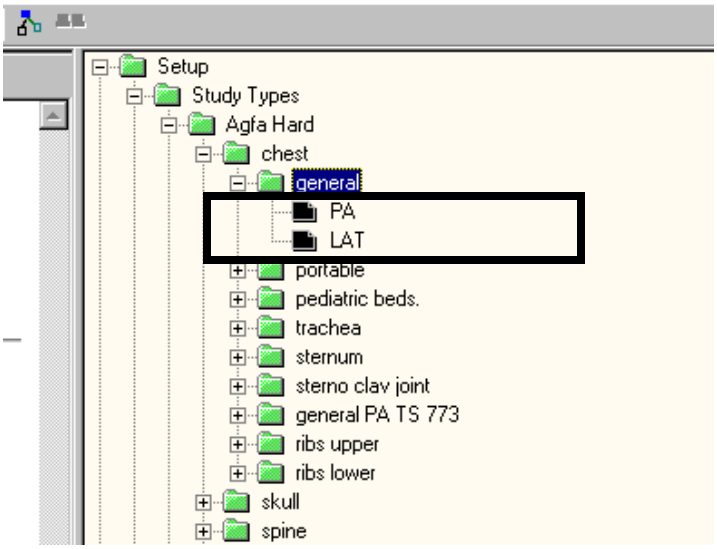
1 Click the plus sign next to the Setup folder to show the available Setup folders (Study Types, Devices, Site Information and Users).

2 Click the plus sign next to the Study Types folder to show the available study groups.

3 Click the plus sign next to a study group folder to show the available study types of that particular study group.

4 Click the plus sign next to a study type folder to show the available substudy types of that particular study type.

5 Click the plus sign next to a substudy type folder to show the available exposure types of that particular substudy type.



Configuring the lists of exposure types

You can configure the lists of exposure types by copying, renaming, moving and deleting study types.

To copy an exposure type:

1 Click the exposure type you want use as source.

2 On the **Edit** menu, click **Copy**.

Alternatively, right-click and select **Copy** or press **CTRL C**.

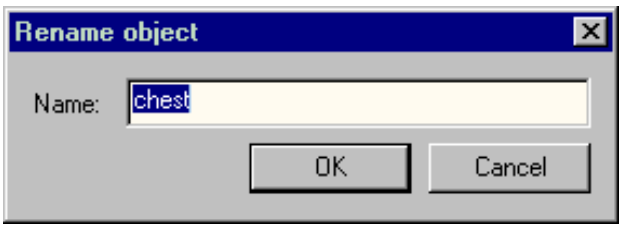
3 Click the destination folder where you want to put the exposure type.

4 On the **Edit** menu, click **Paste**.
Alternatively, right-click and select **Paste** or press **CTRL V**.

To rename an exposure type:

1 Click the exposure type you want to rename.

2 On the **Edit** menu, click **Rename**.
Alternatively, right-click and select **Rename**.
The Rename object window will appear:



3 Enter the new name and click **OK**.

To change the position an exposure type in the substudy type folder:

1 Click the exposure type you want to move.

2 On the **Edit** menu, click **Move Up** or **Move Down**.
Alternatively, right-click and select **Move up** or **Move Down**.
The exposure type will be moved up or down respectively.

To delete an exposure type:

1 Click the exposure type you want to delete.

2 On the **Edit** menu, click **Delete**.
Alternatively, right-click and select **Delete**.
The system will ask you to confirm.

3 Click **Yes** to confirm, click **No** to cancel.

Modifying properties of individual exposure types

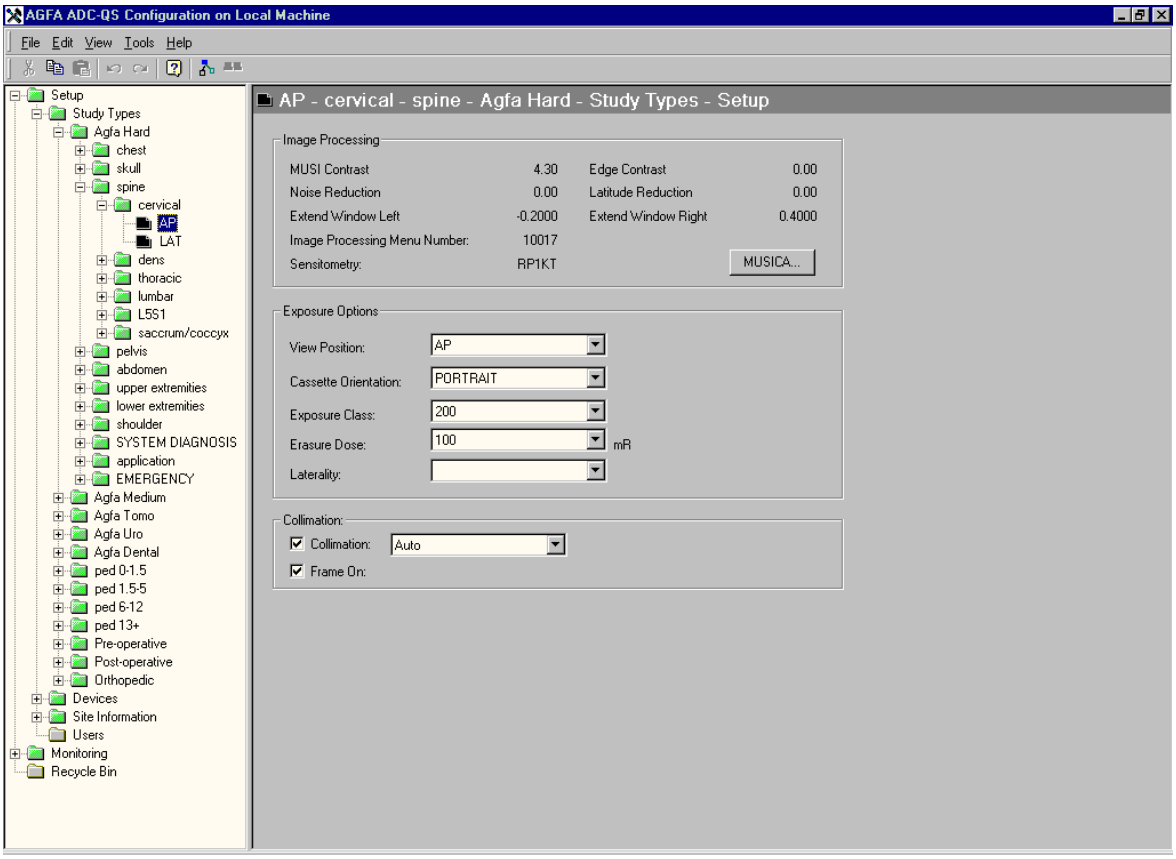
Using the Configuration Viewer Software, you can enter a number of default settings for each individual exposure type:

- Image processing
- Exposure options
- Collimation

To modify exposure type properties:

1 Open a substudy type folder in the Tree View pane and select an exposure type.

The Detail pane will display the configuration parameters of the selected exposure type:



2 Choose one of the following actions:

To	Do this
Change the MUSICA parameters	Click the MUSICA button. The MUSICA window will be displayed. For more information on MUSICA processing, refer to *'Interactively adjusting the image processing parameters (advanced MUSICA processing)'* on page *55*. After you have closed the MUSICA window, the exposure type window will display the new MUSI contrast values for images of this exposure type.
Change the exposure type options	**1** Select a default patient view position (PA, AP, LL, RL) for images of this exposure type. **2** Select the cassette orientation (Portrait or Landscape). **3** Select a default exposure class value between 12 and 1600 from the drop down list. **4** Select a default erasure dose (100, 300, 750) from the drop down list. **5** If necessary, select a laterality value for images of this exposure type.
Enable collimation border detection for images of this exposure type	**1** Tick Collimation. **2** Select a collimation type from the drop-down list box. **3** Tick Frame on if you want to display a gray collimation frame by default.

Interactively adjusting the image processing parameters (advanced MUSICA processing)

Via advanced MUSICA processing (MUSICA: Multi-Scale Image Contrast Amplification), you can fine-tune the contrast and intensity of an image. MUSICA offers the possibility to interactively fine-tune the contrast of all features, of short-range features such as edges, or of long-range features. It also permits you to reduce any residual noise in the image and to simulate the exposure on a specific film type.

To interactively adjust the image processing parameters:

1 Apply the MUSICA parameters according to your preferences:

To		Use
Fine-tune the contrast of all features		MUSI Contrast slider
Fine-tune the contrast of short-range features, including edges ❖ *Use edge contrast enhancement sparingly. Enhancing edge contrast will also enhance noise and may cause artefacts in the image.*		Edge Contrast slider
Reduce noise without affecting the contrast of short-range features such as edges and texture		Noise Reduction slider
Fine-tune the contrast of long-range features		Latitude Reduction slider
Fine-tune the intensity	Make the image darker	Extend Window Left slider
	Make the image lighter	Extend Window Right slider

❖ *Edge contrast and latitude reduction influence the dynamic range of the image. Reducing the dynamic range is useful prior to printing the image on a specific film.*

The effect of the MUSICA processing is shown in real time in the preview images (overview image and detail) of the MUSICA dialog box. You can adjust the zoomed image by dragging the pointer in the Current box.

2 To simulate exposure of the image on a specific film, click a film sensitometric curve in the Sensitometry list.

The effect of exposure on a specific film is shown in real time in the preview images (overview image and detail) of the MUSICA dialog box. You can adjust the zoomed image by dragging the pointer in the Current box.

3 Quit the MUSICA dialog box:

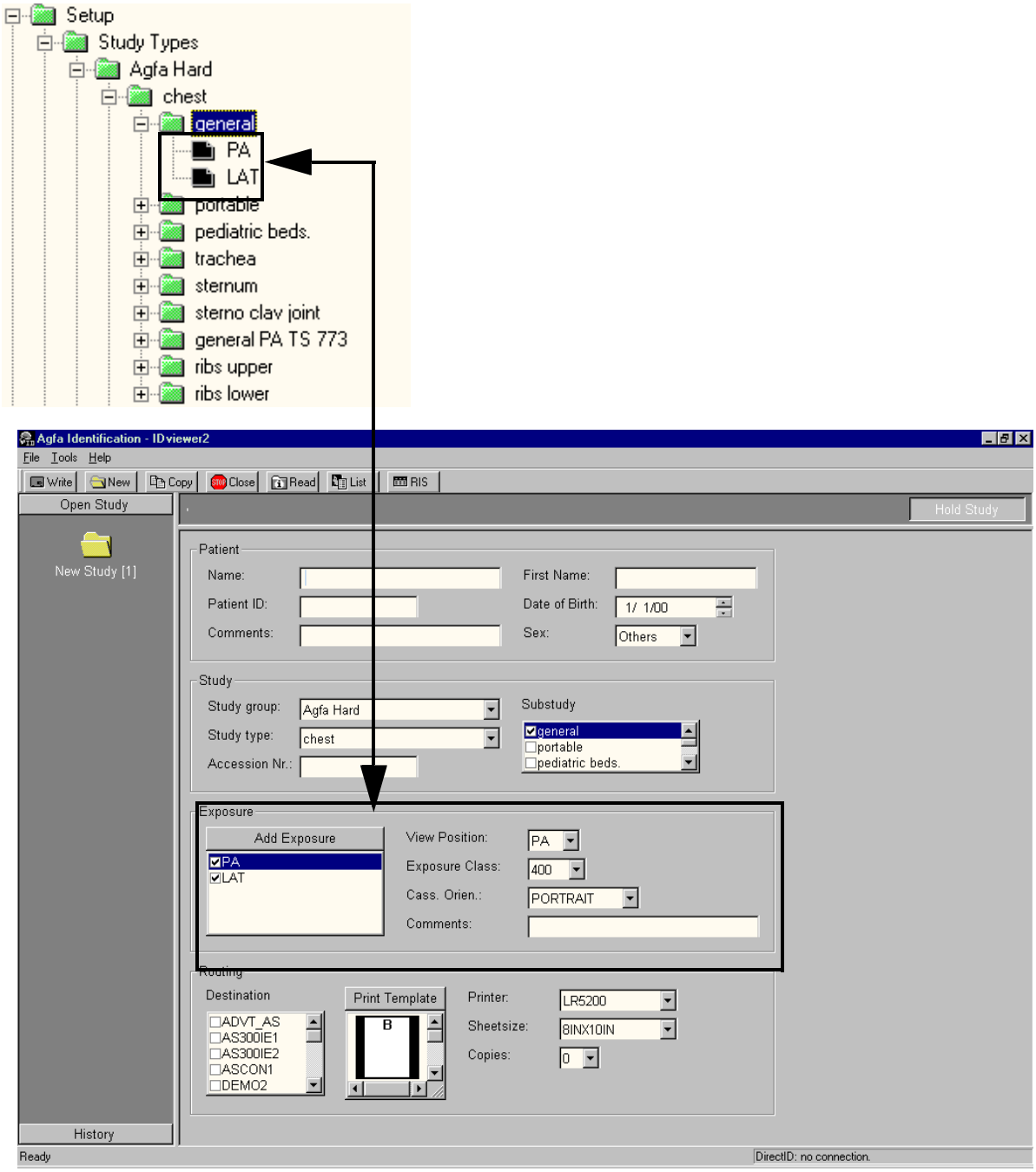
To	Click
Apply the MUSICA processing parameters and quit	OK.
Quit without applying the MUSICA processing parameters	Cancel.

4 To save the changed image, either replace the existing image or save the changed image as a new image.

Example/Exercise:

- Copy a substudy from one study type and paste it in the study type folder of the same or another study group.
- Modify the image processing parameters of the exposure types in order to have images with less contrast.
- Go to the Identification screen of the ID Viewer Software to see the result.

The new exposure type and its settings will appear by default in the exposure type list of the Identification Screen of the ID Viewer Software:



Configuring devices

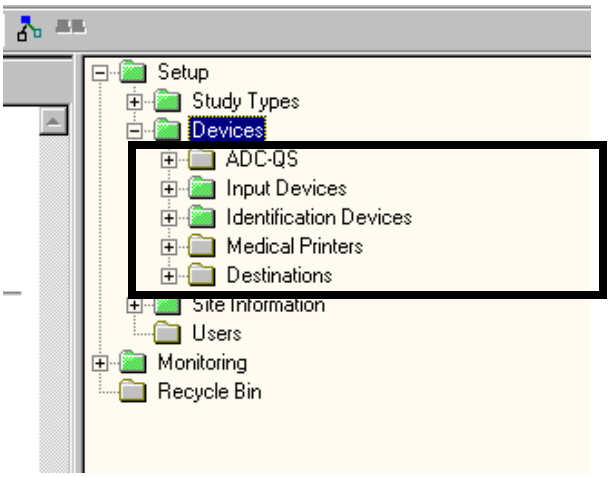
Using the Configuration Viewer Software, you can perform the following actions in order to configure Devices:

- consult the DICOM gateway properties
- add Digitizers and modify the properties of the Digitizers in the list
- add ID Viewers and modify the properties of the ID Viewers in the list
- add Medical Printers and modify the properties of the Medical Printers in the list
- add Destinations and modify the properties of the Destinations in the list

For more information on the terminology, refer to *'Devices - terminology'* on page *28*.

To open the devices folder:

In the Setup folder, click the plus sign next to the Devices folder to show the available types of devices you can integrate in the cluster (ADC QS, Input Devices, Identification Devices, Medical Printers, Destinations).



Consulting and modifying DICOM gateway properties

The DICOM gateway is the Dicom input port on the server of the ADC QS cluster which enables the server to ‘load’ the images.

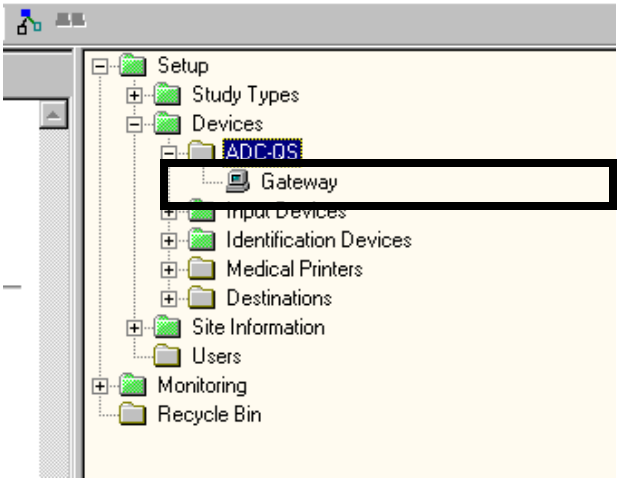
Using the Configuration Viewer Software, you can perform the following actions:

- Consult and modify DICOM gateway properties.

To open the DICOM gateway folder:

1 In the Setup folder, click the plus sign next to the Devices folder to show the available types of devices you can integrate in the cluster (ADC QS, Input Devices, Identification Devices, Medical Printers, Destinations).

2 Click the plus sign next to the ADC QS folder to show the DICOM gateway.



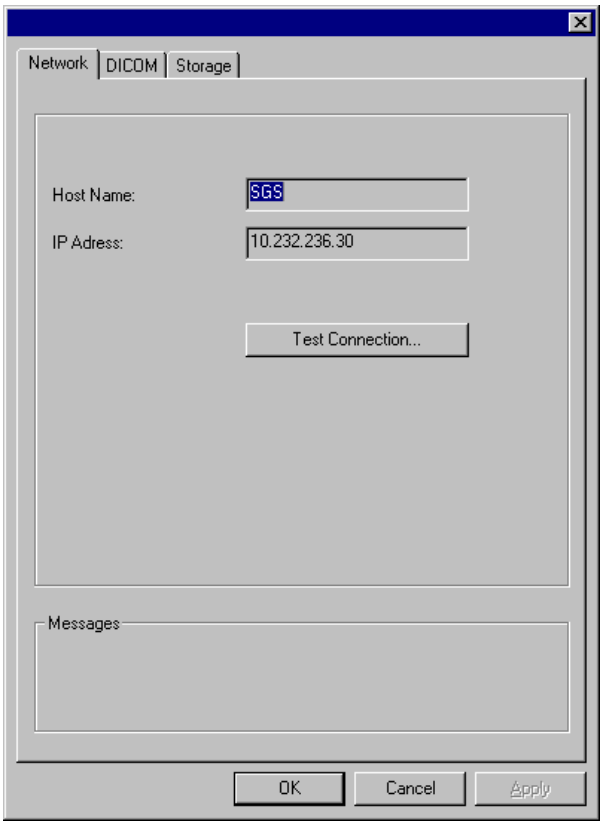
Consulting and modifying the properties of the DICOM gateway

To consult and modify the DICOM gateway properties:

1 In the Tree View pane, double click the DICOM gateway.

Alternatively, you can right-click on the DICOM gateway and click Properties.

The DICOM gateway properties window will appear:

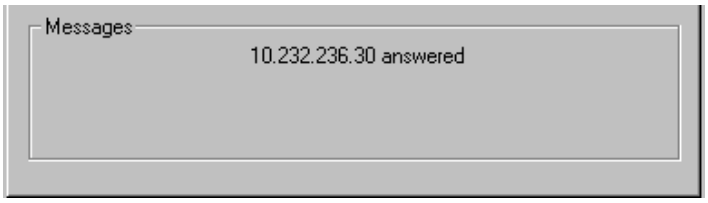


2 In the Network tab, consult the Network settings:

Field	Description
Host name	The name of the host or the IP address of the DICOM gateway. If the IP-address has already been assigned, the IP-address will be shown.
IP Address	The IP address of the DICOM gateway. If the IP-address has already been assigned, the IP-address will be shown.

3 To test the connection, click Test Connection.

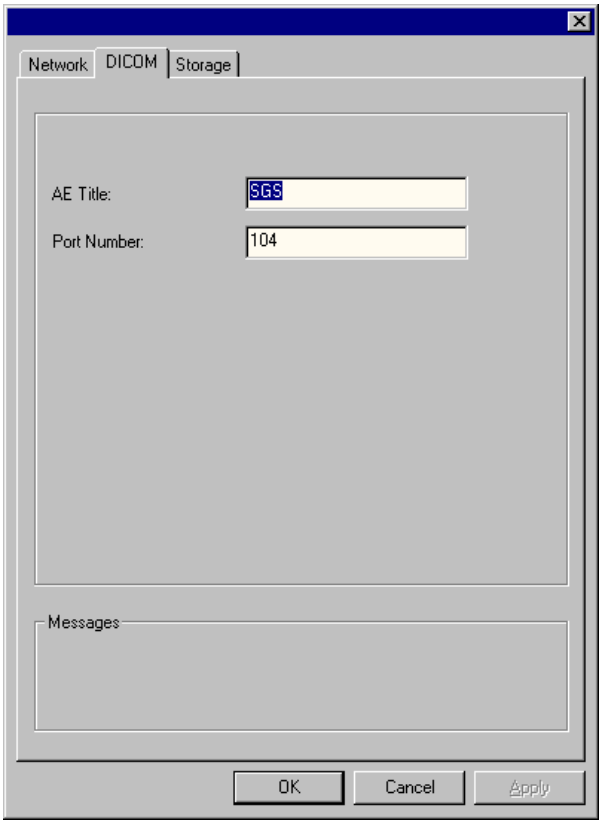
If the result is OK, a confirm message will be displayed in the message box.



Otherwise an error message will appear.

4 Click the DICOM tab to consult or modify the DICOM Settings.

The DICOM tab will appear:

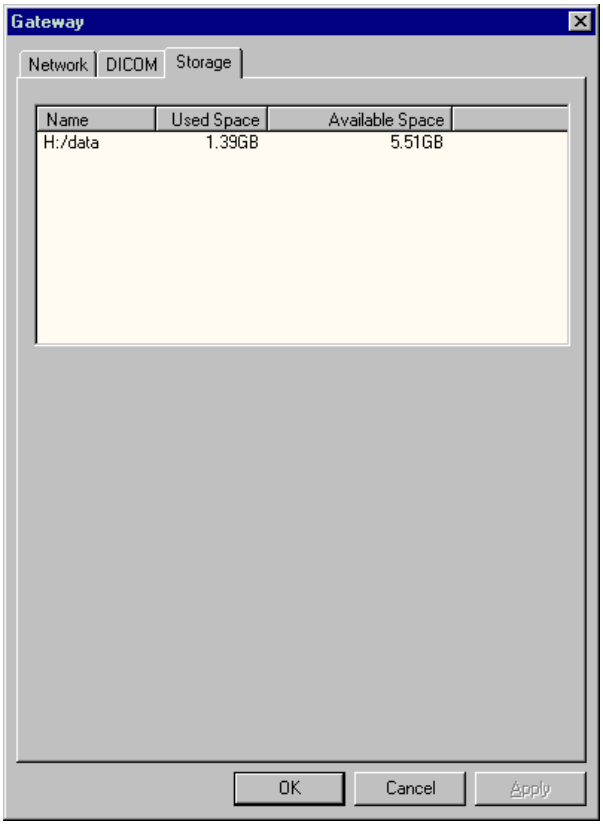


5 Enter or modify the following DICOM settings:

Field	Description
AE-title	The AE-title of the DICOM gateway.
Port Number	The port number of the DICOM gateway. The default DICOM value is 104.

6 Click the Storage tab to consult the Storage settings.

The Storage tab will appear:



7 Click **OK** (applies and saves any changes you have made and then closes the window), **Cancel** (closes the window without saving any of the changes you have made) or **Apply** (saves all the changes you have made without closing the window).

Configuring Digitizers

The Digitizer scans the exposed ADC image plate, converts the information into digital data and automatically transfers the image to the image processing station for further processing and visualization.

Using the Configuration Viewer Software, you can perform the following actions to configure Digitizers:

- Add and delete Digitizers.
- Modify Digitizer properties.
- Use the wizard to add a new Digitizer.

Make sure to have the following information before installing new Digitizers and/or modifying Digitizer properties:

- ***valid IP addresses and/or host names***
- ***a valid DICOM AE-title***
- ***valid image types***

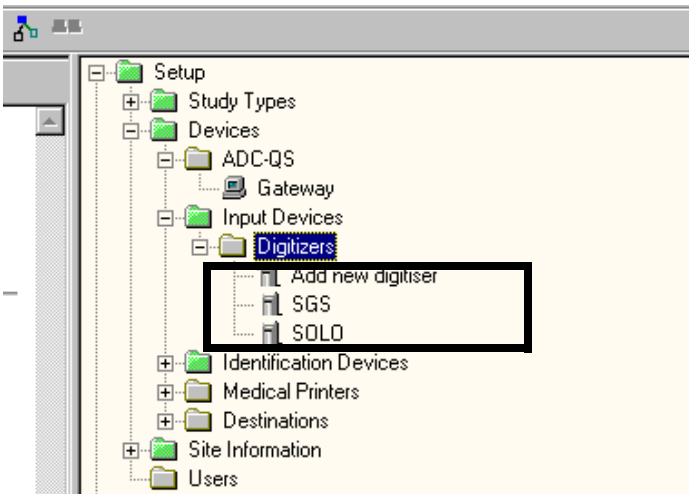
If necessary, contact the IT department of your site.

To open the Digitizers folder:

1 In the Setup folder, click the plus sign next to the Devices folder to show the available types of devices you can integrate in the cluster (ADC QS, Input Devices, Identification Devices, Medical Printers, Destinations).

2 Click the plus sign next to the Input Devices folder to show the available Input devices.

3 Click the plus sign next to the Digitizer folder to show the available Digitizers.



Configuring the list of Digitizers

You can add and delete Digitizers from the Tree view.

To add a new Digitizer:

Click **Add Digitizer**.

Alternatively, right-click and select **New** or click **New** on the **Edit** menu.

The Add Digitizer wizard will appear. Refer to *'Adding a new Digitizer using the wizard'* on page *68*.

To delete a Digitizer:

1. Click the Digitizer you want to delete.
2. On the **Edit** menu, click **Delete**.

   Alternatively, right-click and select **Delete**.

   The system will ask you to confirm deleting the Digitizer.
3. Click **Yes** to confirm deleting, click **No** to cancel.

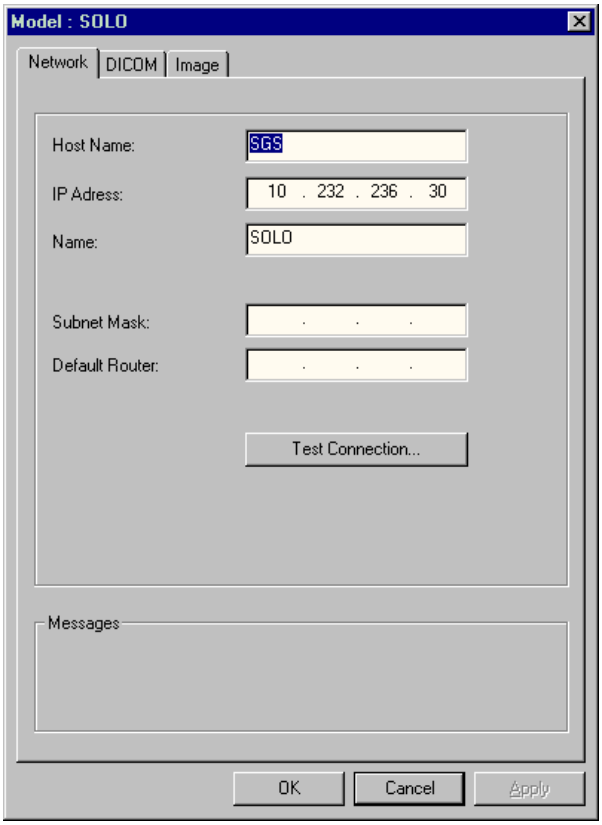
Modifying Digitizer properties

To modify the Digitizer properties:

1. In the Tree View pane, double click the Digitizer of which you want to change the properties.

   Alternatively, right-click on the Digitizer and click Properties.

The Network tab will appear:

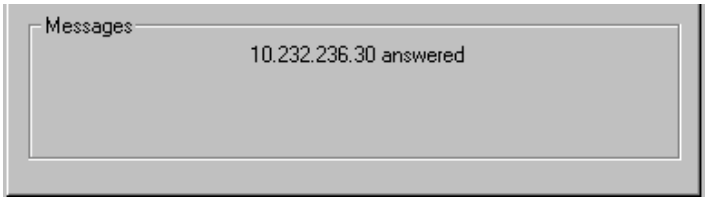


2 Enter or modify the following Network settings:

Field	Description
Host name	The name of the host or the IP address of the Digitizer. If the IP-address has already been assigned, the IP-address will be shown.
IP Address	The IP address of the Digitizer. If the IP-address has already been assigned, the IP-address will be shown.
Name	The name of the Digitizer.
Subnetmask	The subnetmask, parameter depending on the IP address of the Digitizer.
Default router	The default router.

3 To test the connection, click Test Connection.

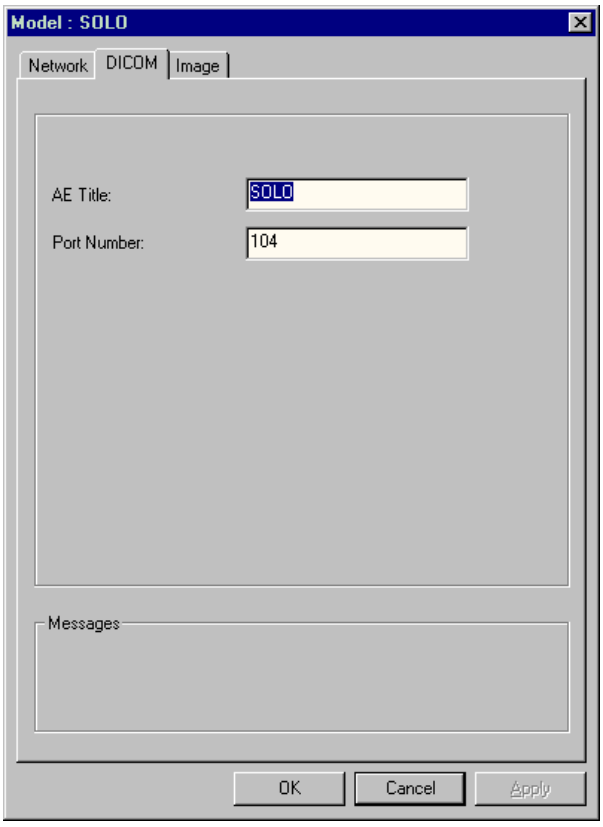
If the result is OK, a confirm message will be displayed in the message box:



Otherwise an error message indicating the problem will appear.

4 Click the DICOM tab to modify the DICOM settings.

The DICOM tab will appear:

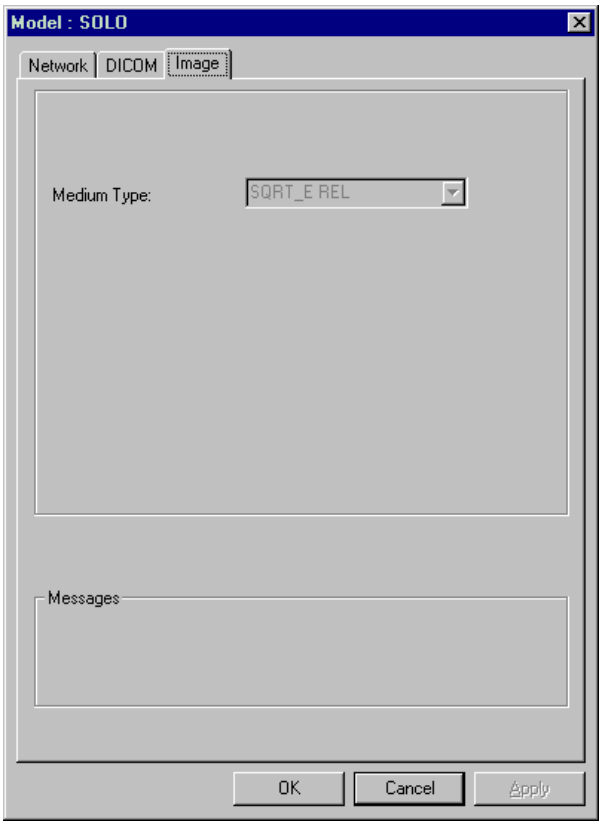


5 Enter or modify the following DICOM settings:

Field	Description
AE-title	The AE-title of the Digitizer.
Port Number	The port number of the Digitizer.

6 Click the Image tab to modify the Image settings.

The Image tab will appear:



7 Enter or modify the following image settings:

Field	Description
Image type	Select the image type or multiple image types (if the Digitizer supports multiple image types).

8 Click **OK** (applies and saves any changes you have made and then closes the window), **Cancel** (closes the window without saving any of the changes you have made) or **Apply** (saves all the changes you have made without closing the window).

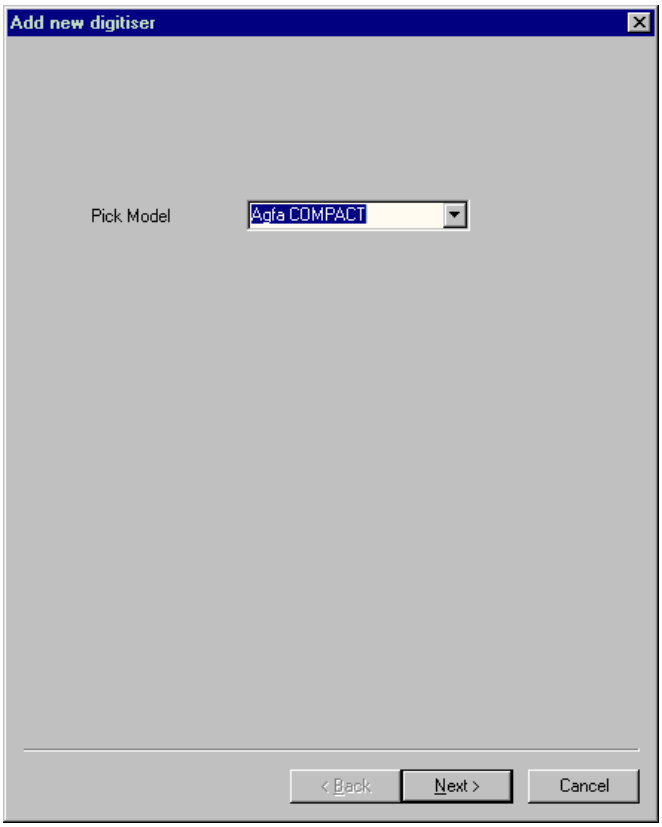
Adding a new Digitizer using the wizard

To add a new Digitizer:

1 Click **Add Digitizer**.

Alternatively, click **New** in the **Edit** menu or right-click and select **New**.

The Add Digitizer wizard will appear:



2 Using the Add Digitizer Wizard, enter the following data in the wizard screens:

- the model of the Digitizer
- Network settings: host name, IP address, name
- DICOM settings: AE-title, port number
- medium settings

Click Next or Previous to browse through the different wizard tabs.

The wizard tabs correspond with the properties tabs. For more information on the different tabs of the wizard, refer to *'Modifying Digitizer properties'* on page *64*.

3 When you have entered these settings, click Finish.

The newly added Digitizer will appear in the Digitizer list.

Configuring ID Viewers

The ID Station allows you to link the patient demographic data and examination data of an exposure to the corresponding image.

Using the Configuration Viewer Software, you can perform the following actions in order to configure ID Viewers:

- Add and delete ID Viewers.
- Use the wizard to add a new ID Viewer
- Modify ID Viewer properties.

Make sure to have the following information before installing new ID Viewers and/or modifying ID Viewer properties:

- ***valid IP addresses and/or host names***

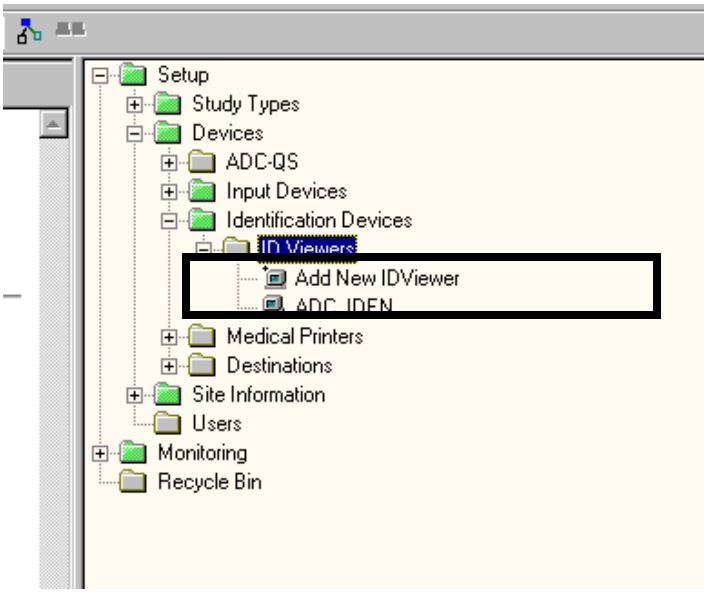
If necessary, contact the network specialist of your site.

To open the ID Viewers folder:

1 In the Setup folder, click the plus sign next to the Devices folder to show the available types of devices you can integrate in the cluster (ADC QS, Input Devices, Identification Devices, Medical Printers, Destinations).

2 Click the plus sign next to the Identification Devices folder to show the available Identification devices.

3 Click the plus sign next to the ID Viewer folder to show the available ID Viewers.



Configuring the list of ID Viewers

You can add and delete ID Viewers from the tree view pane.

To add a new ID Viewer:

Click **Add ID Viewer**.

Alternatively, right-click and select **New** or click **New** on the **Edit** menu.

The Add ID Viewer wizard will appear. Refer to *'Adding a new ID Viewer using the wizard'* on page *74*.

To delete an ID Viewer:

1 Click the ID Viewer you want to delete.

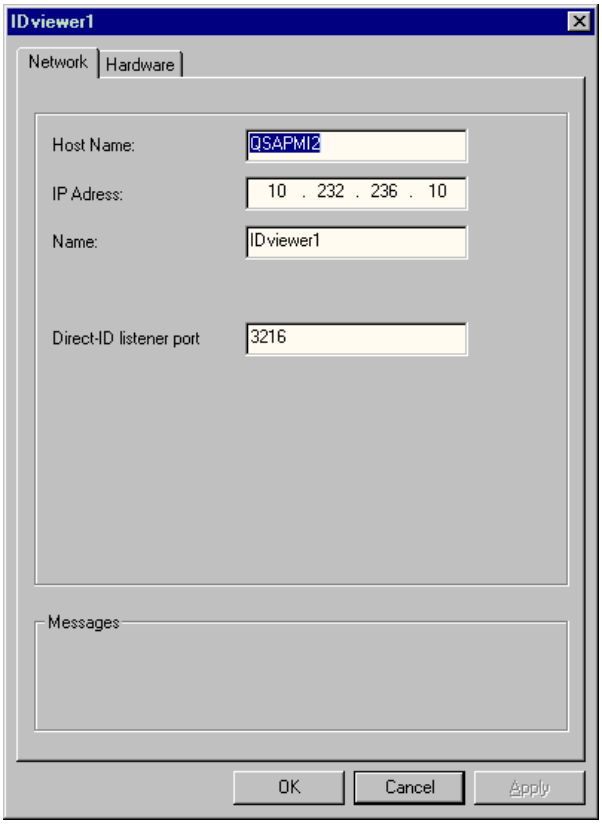
2 On the **Edit** menu, click **Delete**.
Alternatively, right-click and select **Delete**.
The system will ask you to confirm.

3 Click **Yes** to confirm, click **No** to cancel.

Modifying ID Viewer properties

To modify the ID Viewer properties:

1 In the Tree View pane, double click the ID Viewer of which you want to change the properties.
Alternatively, right-click on the ID Viewer and select Properties.
The Detail pane will display the configuration parameters of the selected ID Viewer:

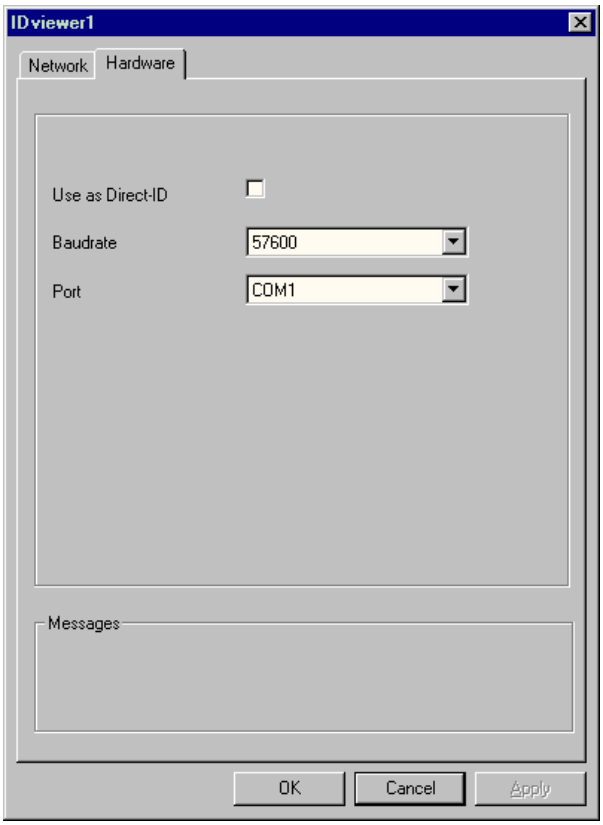


2 In the ID Viewer properties window, enter the following Network settings.

Field	Description
Host name	The name of the host or the IP address of the ID Viewer. If the IP-address has already been assigned, the IP-address will be shown.
IP Address	If the IP-address has already been assigned, the IP-address will be shown.
Name	The name of the ID Viewer.
Direct ID listener port	The Direct ID listener port (if you work with Direct ID).

3 Click the Hardware tab to modify the hardware settings.

The Hardware tab will appear:



You can enter or modify the following settings:

- settings concerning the usage method of the ID Station (with Direct ID or with ID Tablet).
- the baudrate and the COM port of the ID tablet (only when the ID Station is connected with an ID Tablet).

If	Do this
You want to identify cassettes with Direct ID,	**1** Select the Use as Direct-ID check box. As a result, the identification data are transmitted from the ID Station to the Digitizer via the network.
You want to identify cassettes with an ID tablet	**1** Clear the Use as Direct-ID check box. **2** Select a baudrate from the list of supported baudrates (the rate at which bits are transmitted from the ID Station to the ID Tablet). **3** Select a port. As a result, the identification data entered via the ID Station are stored in the memory chip of the ADC cassette via a serial connection with the ID Tablet.

4 Click **OK** (applies and saves any changes you have made and then closes the window), **Cancel** (closes the window without saving any of the changes you have made) or **Apply** (saves all the changes you have made without closing the window).

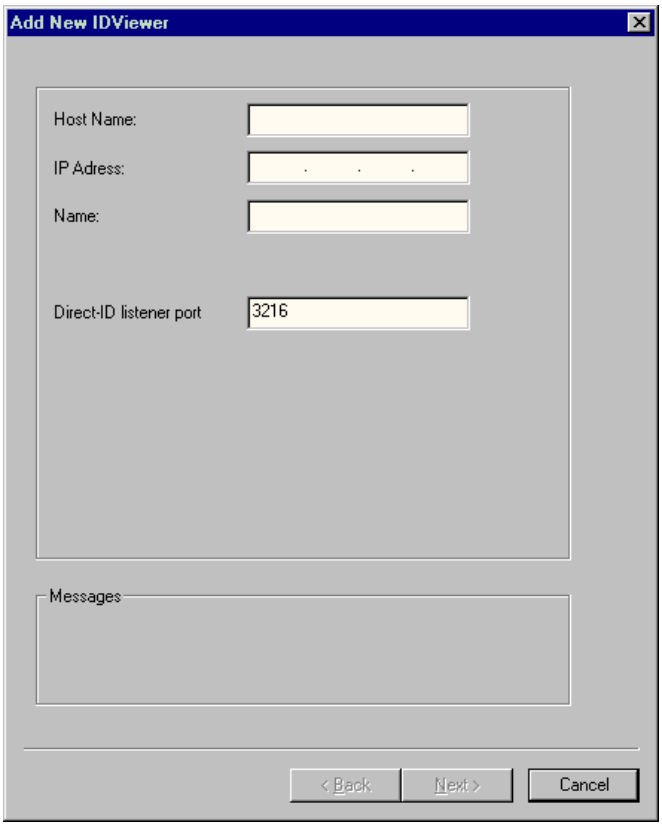
Adding a new ID Viewer using the wizard

To add a new ID Viewer:

1 Click **Add ID Viewer**.

Alternatively, right-click and select **New** or click **New** on the **Edit** menu.

The Add ID Viewer wizard will appear:



2 Using the Add ID Viewer Wizard, enter the following data in the wizard screens:

- Network settings: host name, IP address, name, direct ID listener port.
- Hardware: Use as direct ID, baudrate, port.

Click Next or Previous to browse through the different wizard tabs.

The wizard tabs correspond with the properties tabs. For more information on the use of the wizard tabs, refer to *'Modifying ID Viewer properties'* on page *71*.

3 When you have entered these settings, click Finish.

The newly added ID Viewer will appear in the ID Viewer list.

Configuring printers

When it comes to configuring printers, there is a difference between the server and client version of the Configuration Viewer Software. Working on a client computer, you will not be able to add and delete printers from the configuration tree.

A medical printer is used to produce diagnostic hardcopies of radiographic images.

Using the Configuration Viewer Software, you can perform the following actions in order to configure printers:

- Add and delete printers.
- Use the wizard to add a new printer
- Modify printer properties.

Make sure to have the following information before installing new printers and/or modifying the printer properties.

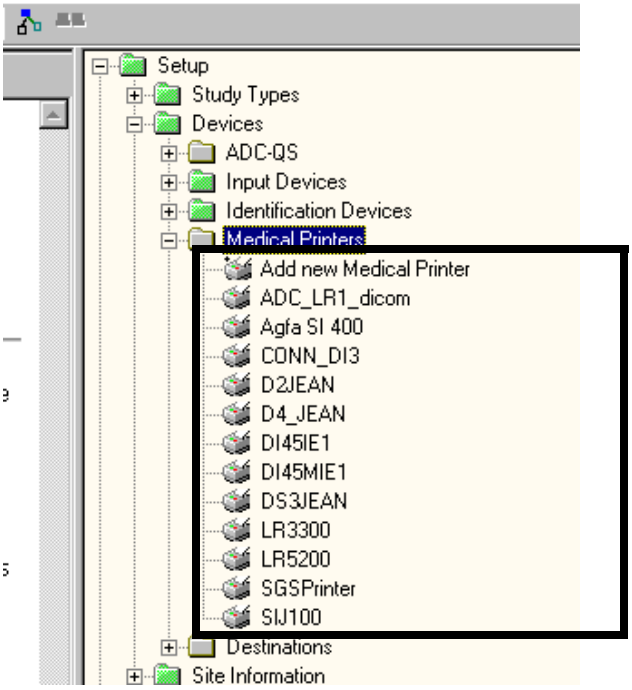
- ***valid IP addresses and/or host names***
- ***a valid DICOM AE-title***
- ***valid rerouting destinations in case the printers fail to perform the printing tasks***
- ***valid film formats and medium types the printers use***
- ***valid image and view box parameters***

If necessary, contact the network specialist of your site.

To open the medical printers folder:

1 In the Setup folder, click the plus sign next to the Devices folder to show the available types of devices you can integrate in the cluster (ADC QS, Input Devices, Identification Devices, Medical Printers, Destinations).

2 Click the plus sign next to the Medical Printer folder to show the available medical printers.



❖ ***The printers listed here are configured as medical printers. They are defined in the server as well as in Windows NT®. Only change their properties via the Configuration Viewer Software.***

Configuring the list of medical printers

You can add and delete Medical printers from the list view.

To add a new Medical printer:

Click Add Medical Printer.

Alternatively, right-click and select **New** or click **New** on the **Edit** menu.

The Add Medical printer wizard will appear. Refer to *'Adding a new medical printer using the wizard'* on page *85*.

To delete a Medical printer:

1 Click the Medical printer you want to delete.

2 On the **Edit** menu, click **Delete**.
Alternatively, right-click and select **Delete**.
The system will ask you to confirm.

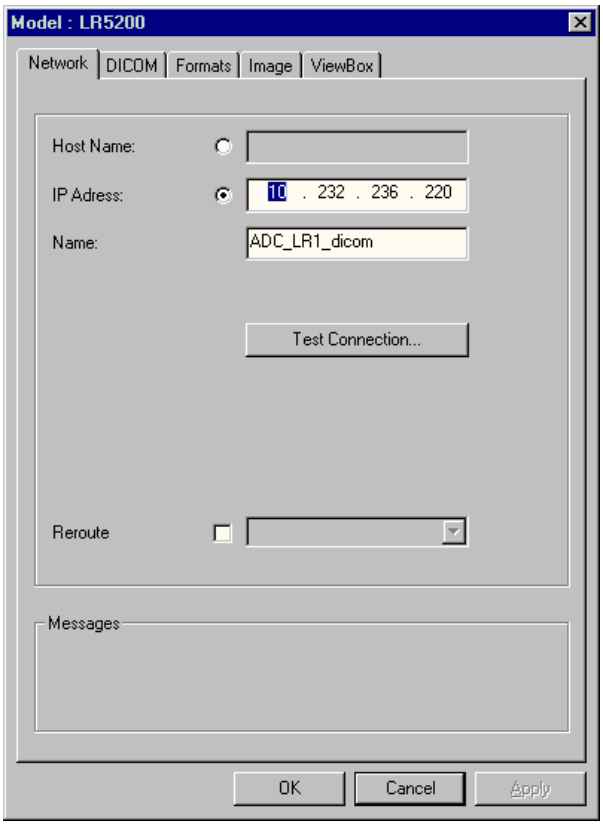
3 Click **Yes** to confirm deleting, click **No** to cancel.

Before deleting a printer, check if any of the substudy types are using this printer. If you do delete a printer, you may also have to re-configure a number of substudy types and printing templates.

Modifying printer properties

To modify the properties of a medical printer:

1 Double click the Medical Printer of which you want to change the properties.
Alternatively, right-click on the printer and select Properties.
The Printer properties window will appear:

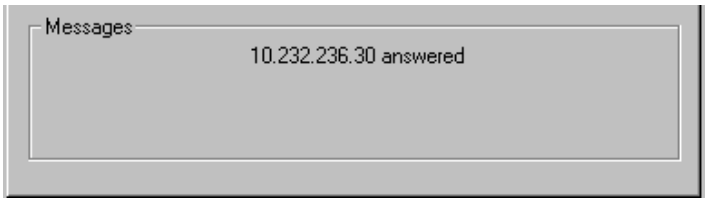


2 In the Medical printer properties window, enter the following Network settings:

Name	The name of the printer.
Host name	The name of the host or the IP address of the printer. If the IP-address has already been assigned, the IP-address will be shown.
Reroute	The name of the destination to which the print job will be rerouted in case the default printer is not available

3 To test the connection, click Test Connection.

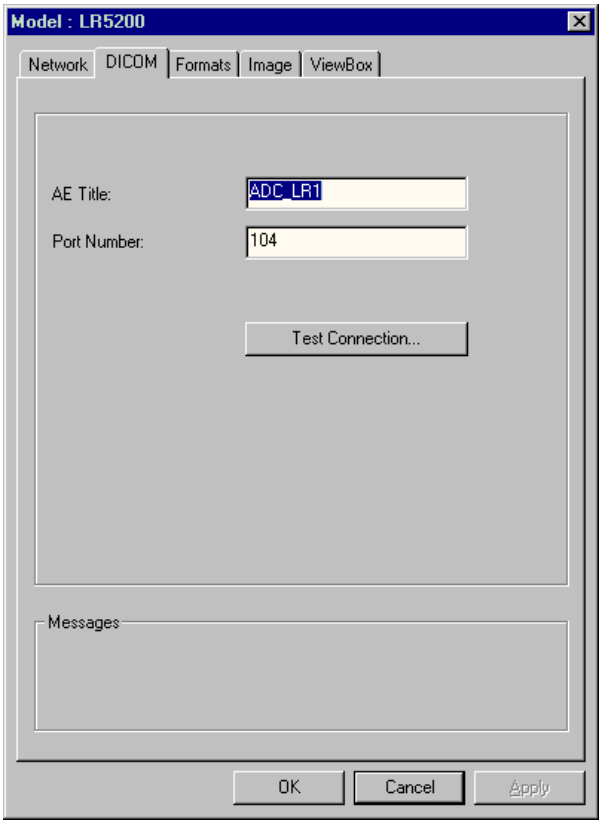
If the result is OK, a confirm message will be displayed in the message box:



Otherwise an error message indicating the problem will appear.

4 Click the Dicom settings tab to modify the Dicom settings.

The Dicom settings window will appear:

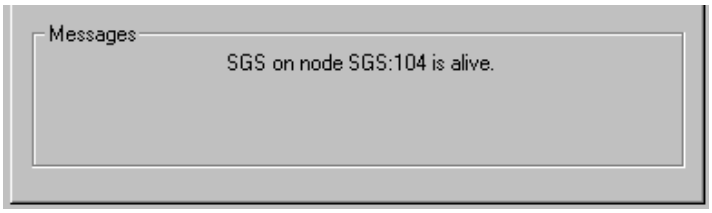


5 Enter the following Dicom settings.

Field	Description
AE-title	The AE-title of the printer.
Port Number	The port number of the printer. The default Dicom value is 104.

6 To test the connection, click Test Connection.

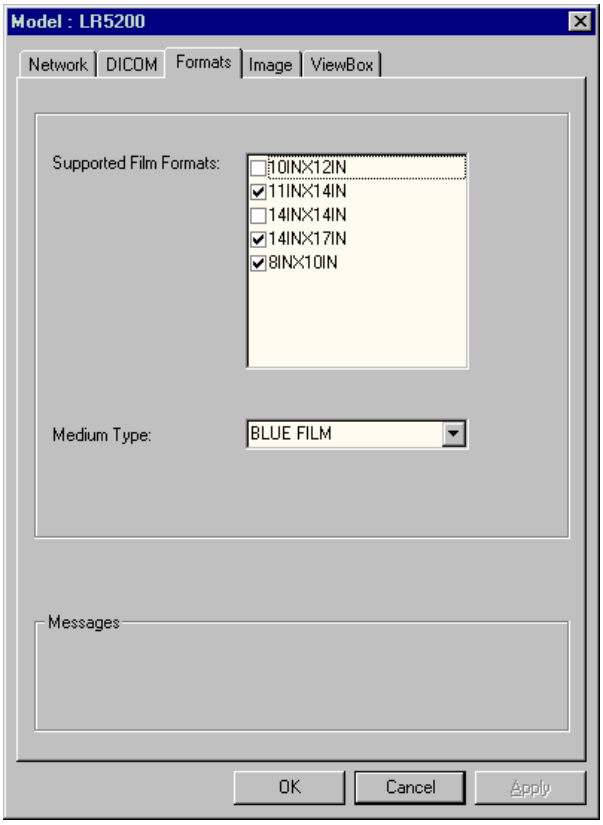
If the result is OK, a confirm message will be displayed in the message box:



Otherwise an error message indicating the problem will appear.

7 Click the Format tab to modify the film format settings.

The Format tab will appear.

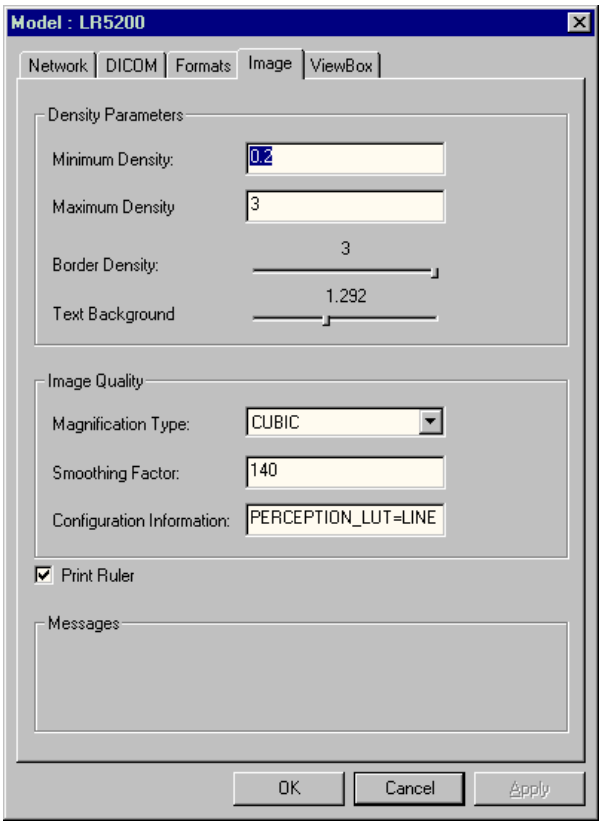


8 Enter or modify the following Format settings:

Field	Description
Supported film format	The film formats which are supported by the printer.
Medium Type	The medium type: • bluebased film • clearbased film

9 Click the Image tab to modify the image settings.

The Image tab will appear:



You can now consult or modify the following data:

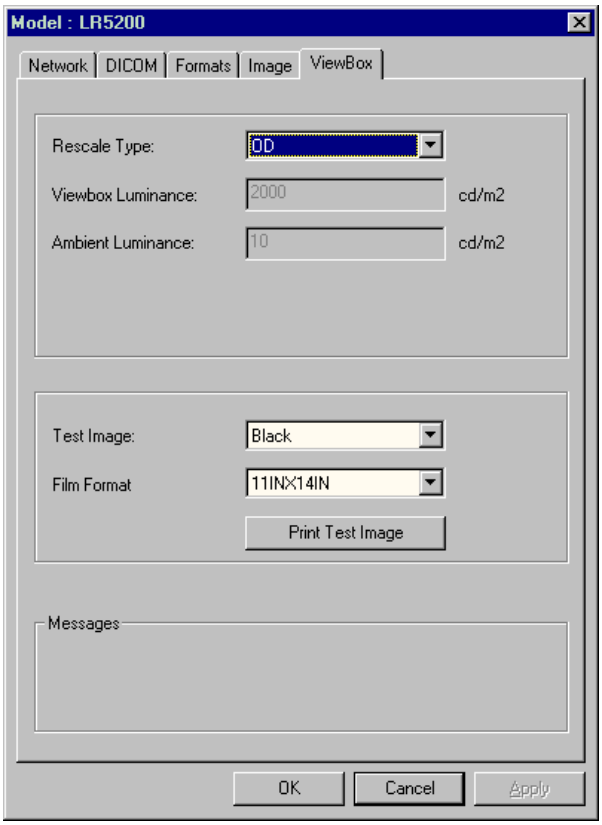
- The minimum optical density the printer supports
- The maximum optical density the printer supports
- The darkness of the border around the printed image.
- The darkness of the text box background for the printed image.
- The magnification type
- The smoothing factor used in the interpolation algorithm.
- Configuration information
- the usage of a print ruler

10 Enter or modify the following Image settings:

To	Do this
Change the minimum value of the optical density	Type the value.
Change the maximum value of the optical density	Type the value.
Change the degree of darkness of the border	Drag or click the slider to increase or decrease the darkness of the border around the printed image.
Change the degree of darkness of the text background	Drag or click slider to increase or decrease the darkness of the text box background for the printed image.
Change the magnification Type	Select one of the following values from the drop down list: • Bilinear, • Cubic, • None, • Replicate.
Enter or change the code for the smoothing factor used in the interpolation algorithm.	Enter the code. ❖ *Default value is 140.*
Configuration information	Enter configuration information. Which information???
Print ruler	Check if you want to use a printer ruler???

11 Click the View Box tab to modify the viewbox settings.

The View Box tab will appear:



You can consult or modify the following data:

- the rescale type
- the luminance expressed in Lumen of the viewbox on which you will read the images (viewbox luminance).
- the luminance expressed in Lumen of the environment of the viewbox on which you will read the images (ambient luminance).
- the test page properties

12 Enter or modify the following View Box settings:

To	Do this
The rescale type	Select one of the following rescale types from the drop down list: • OD • Perception
Enter the viewbox luminance value	Enter a value (expressed in Lumen). Default value is 2600.
Enter ambient luminance value	Enter a value (expressed in Lumen).
Select the test image	Select one of the following test images from the drop down list: • Black image, • Grey Image, • Step Wedge, • SMPTE.
Select the film format for the test image	Select a film format from the drop down list.

13 Click Print Test Image to send the image selected in Test Image drop down box to the printer.

14 Click **OK** (applies and saves any changes you have made and then closes the window), **Cancel** (closes the window without saving any of the changes you have made) or **Apply** (saves all the changes you have made without closing the window).

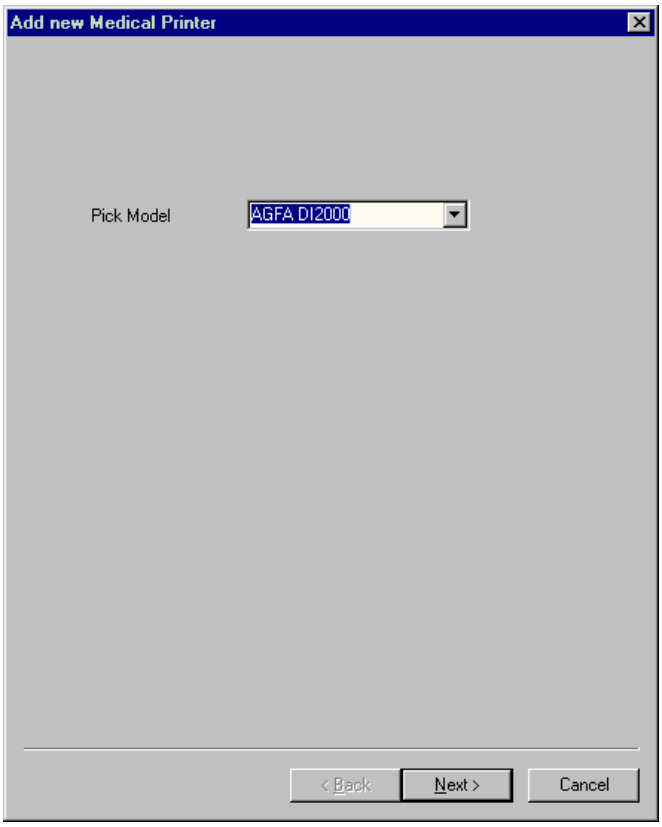
Adding a new medical printer using the wizard

To add a new medical printer:

1 Click Add Medical Printer.

Alternatively, right-click and select **New** or click **New** in the **Edit** menu.

The Add Printer wizard will appear:



2 Using the Add Medical Printer Wizard, enter the following data in the wizard screens:

- the model of the printer
- Network settings
- DICOM settings
- Format settings
- Image settings
- Viewbox settings

Click Next or Previous to browse through the different wizard tabs.

The wizard tabs correspond with the properties tabs. For more information on the use of the wizard tabs, refer to *'Modifying printer properties'* on page *78*.

Configuring Destinations

A destination is a device to which the studies are routed after they have been digitized.

In the ADC QS Cluster, three types of destinations are possible:

- ADC QS: a destination of this type is a server of an ADC QS network, e.g.. the server of another cluster.
- Archive: a destination of this type is a device to which images are routed in order to store all the image parameters.
- Softcopy destination: a softcopy destination is a destination to which images are routed to look at them. This destination does only receive a limited number of parameters.

Using the Configuration Viewer Software, you can perform the following actions in order to configure Destinations:

- Add and delete Destinations.
- Use the wizard to add a new Destination
- Modify Destination properties.

Make sure to have the following information before adding new destinations and/or modifying the destination properties.

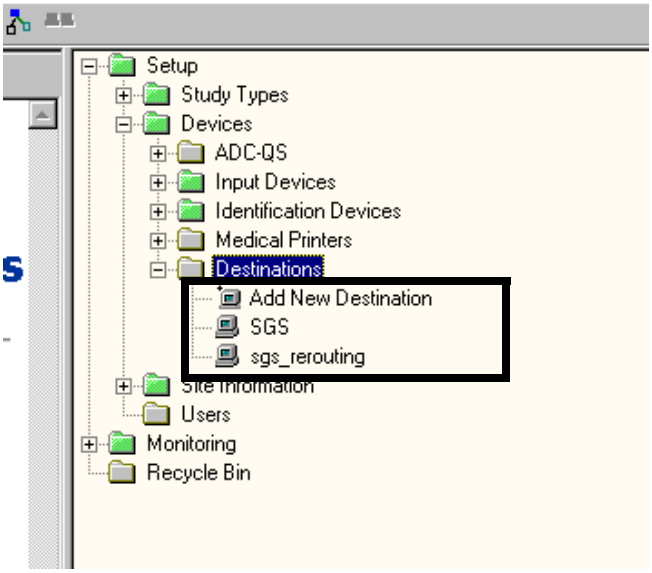
- ***valid IP addresses and/or host names***
- ***a valid DICOM AE-title***
- ***valid post processing parameters and resolution parameters of the destinations***
- ***valid display parameters***

If necessary, contact the network specialist of your site.

To open the destinations folder:

1 In the Setup folder, click the plus sign next to the Devices folder to show the available types of devices you can integrate in the cluster (ADC QS, Input Devices, Identification Devices, Medical Printers, Destinations).

2 Click the plus sign next to the Destinations folder to show the available destinations.



The list of available Destinations will appear.

Configuring the list of destinations

You can add and delete destinations from the list view.

To add a new Destination:

Click Add Destination.

Alternatively, right-click and select **New** or click **New** on the **Edit** menu.

The Add Destination wizard will appear. Refer to *'Adding a new Destination using the wizard'* on page *100*.

To delete a Destination:

1 Click the Destination you want to delete.

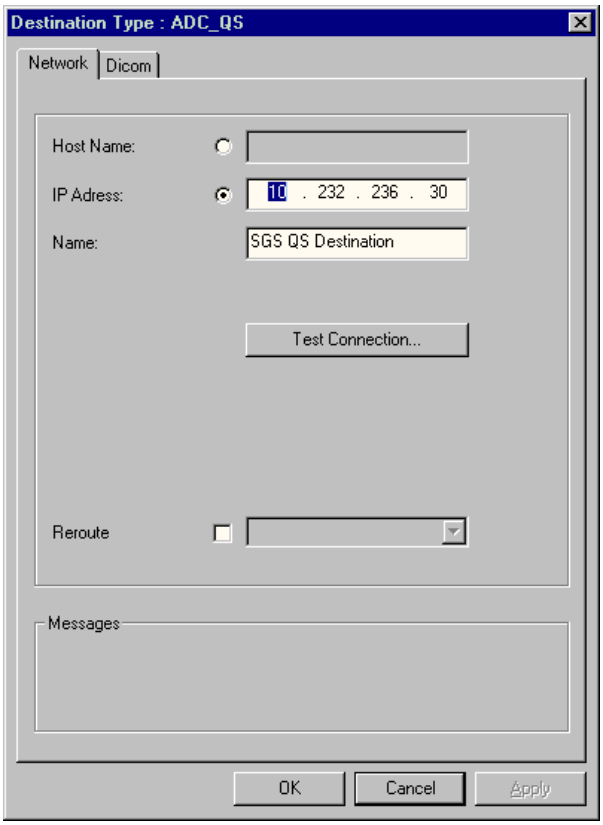
2 On the **Edit** menu, click **Delete**.
Alternatively, right-click and select **Delete** or click **Delete** on the **Edit** menu.
The system will ask you to confirm.

3 Click **Yes** to confirm, click **No** to cancel.

Modifying ADC QS Destination properties

To modify ADC QS Destination properties:

1 Double click the ADC QS destination of which you want to change the properties.
Alternatively, right-click on the Destination and click Properties.
The Destination properties window will appear:

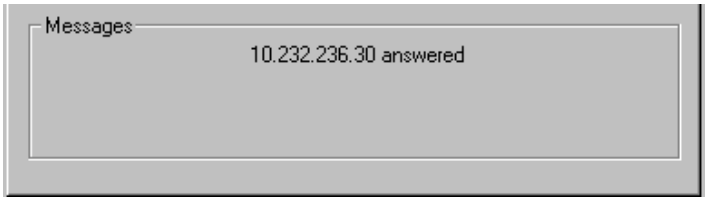


2 Enter or modify the following Network settings:

Field	Description
Host name	The name of the host or the IP address of the destination. If the IP-address has already been assigned, the IP-address will be shown.
IP Address	The IP address of the destination If the IP-address has already been assigned, the IP-address will be shown.
Name	The name of the ADC QS destination.
Reroute	The name of the destination to which the print job will be rerouted in case the default printer is not available

3 To test the connection, click Test Connection.

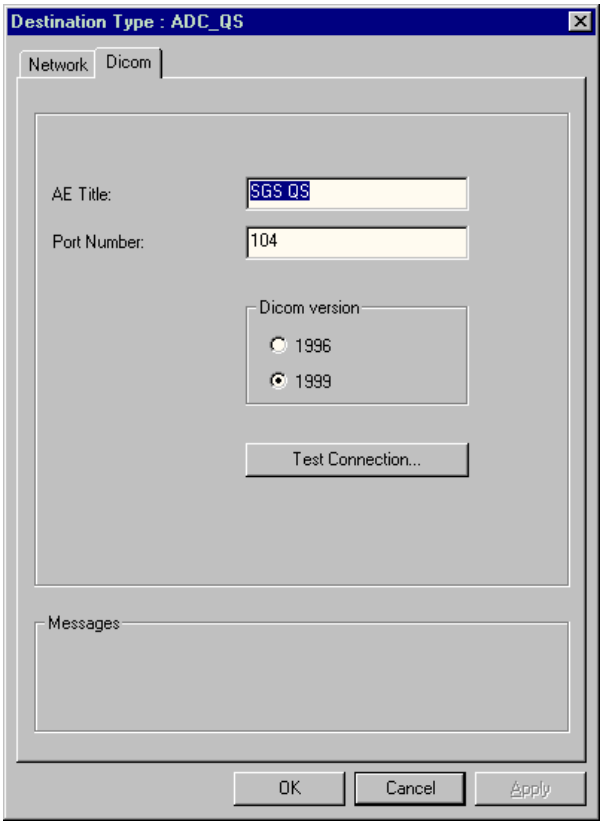
If the result is OK, a confirm message will be displayed in the message box:



Otherwise an error message indicating the problem will appear.

4 Click the Dicom tab to modify the Dicom settings.

The Dicom settings window will appear:

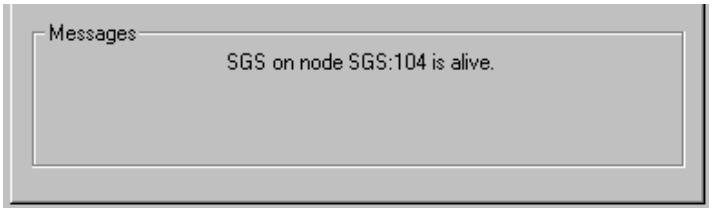


5 Enter the following settings

Field	Description
AE-Title	The AE-title of the destination.
Port Number	The port number of the destination. The default Dicom value is 104.
Version	The Dicom version (1996 or 1999)

6 To test the connection, click Test Connection.

If the result is OK, a confirm message will be displayed in the message box:



Otherwise an error message indicating the problem will appear.

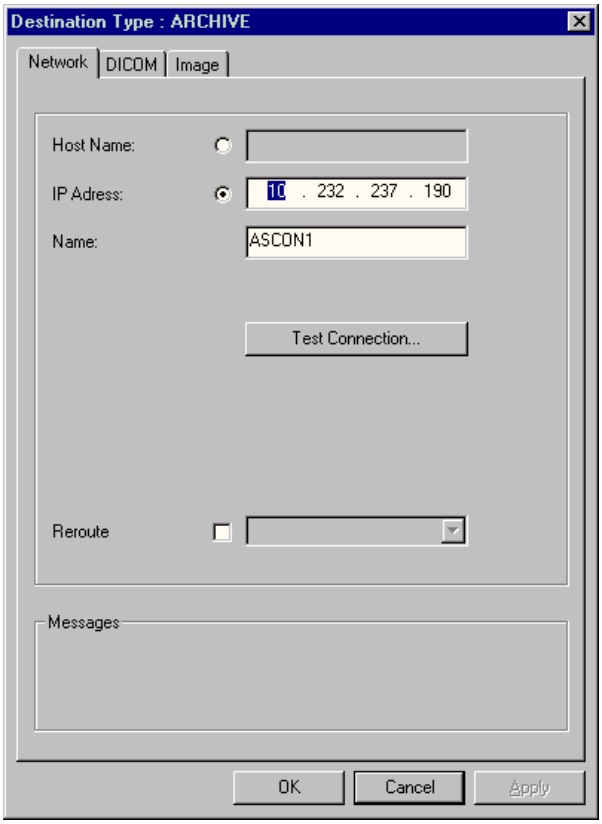
Modifying Archive Destination properties

To modify the Archive Destination properties:

1 Double click the Archive destination of which you want to change the properties.

Alternatively, right-click on the Destination and click Properties.

The Destination properties window will appear:

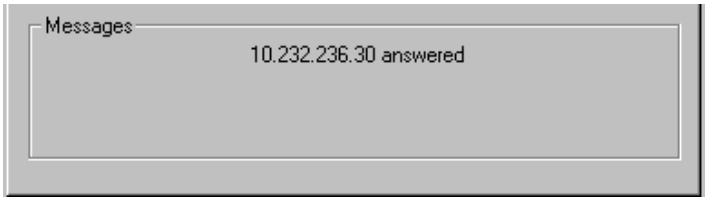


2 Enter or modify the following Network settings:

Field	Description
Host name	The name of the host or the IP address of the destination. If the IP-address has already been assigned, the IP-address will be shown.
IP Address	The IP address of the destination If the IP-address has already been assigned, the IP-address will be shown.
Name	The name of the destination.
Reroute	The name of the destination to which the print job will be rerouted in case the default printer is not available

3 To test the connection, click Test Connection.

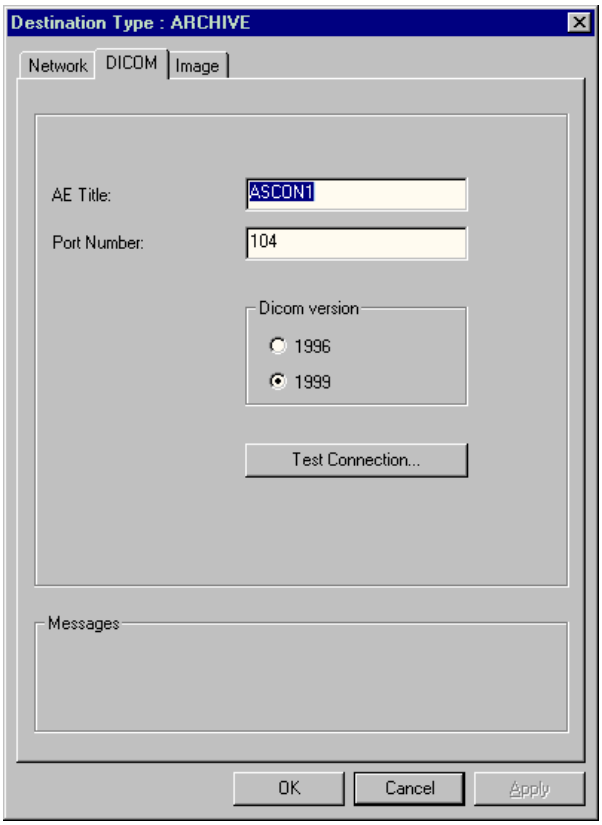
If the result is OK, a confirm message will be displayed in the message box:



Otherwise an error message indicating the problem will appear.

4 Click the Dicom tab to modify the Dicom settings.

The Dicom settings window will appear:

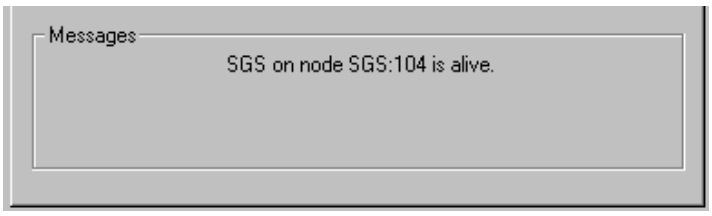


5 Enter the following settings

Field	Description
AE-Title	The AE-title of the destination.
Port Number	The port number of the destination. The default Dicom value is 104.
Version	The Dicom version (1996 or 1999)

6 To test the connection, click Test Connection.

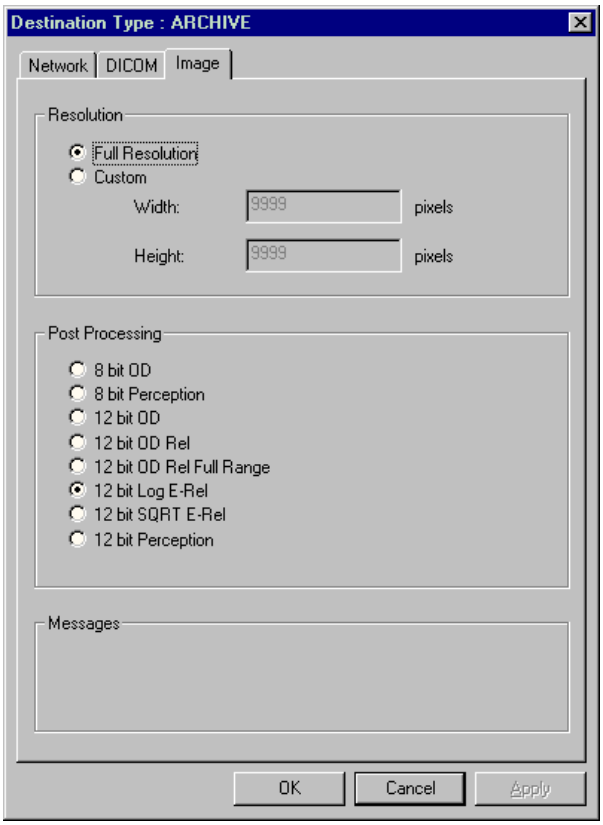
If the result is OK, a confirm message will be displayed in the message box:



Otherwise an error message indicating the problem will appear.

7 Click the Image tab to modify the image settings.

The Image settings window will appear:



You can now select resolution (full or custom resolution) and post processing parameters.

8 Enter or modify the following Image settings:

To	Do this
Select the resolution parameters which will be used by this destination	**1** Select Full resolution to send images in full resolution to the destination. **2** Select Custom resolution to send images to the destination with a custom resolution. **3** If you have selected Custom resolution, enter a custom value for resolution width and a custom value for custom height.
Select the Post processing parameters which will be used by this destination	Select one of the post processing parameters. [More information???]

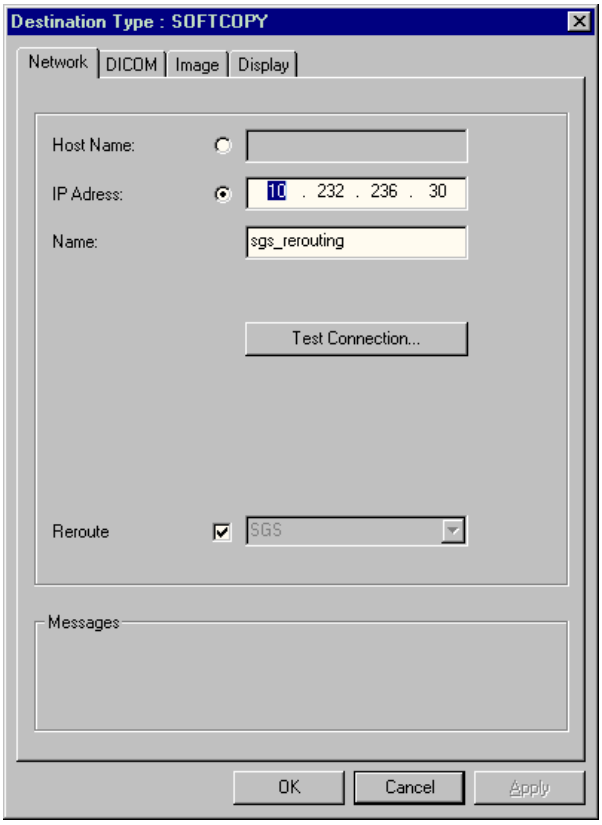
Modifying Softcopy Destination properties

To modify the Softcopy Destination properties:

1 Double click the Softcopy destination of which you want to change the properties.

Alternatively, right-click on the Destination and click Properties.

The Destination properties window will appear:



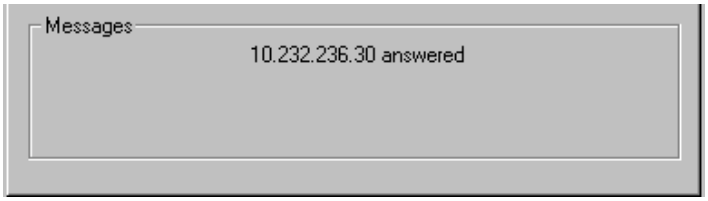
2 Enter or modify the following Network settings:

Field	Description
Host name	The name of the host or the IP address of the destination. If the IP-address has already been assigned, the IP-address will be shown.
IP Address	The IP address of the destination If the IP-address has already been assigned, the IP-address will be shown.
Name	The name of the destination.

Reroute	The name of the destination to which the print job will be rerouted in case the default printer is not available

3 To test the connection, click Test Connection.

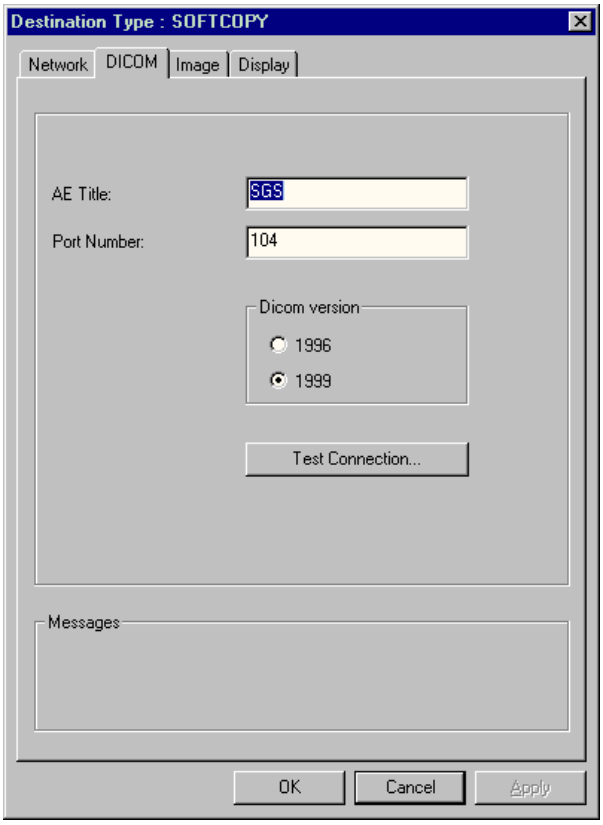
If the result is OK, a confirm message will be displayed in the message box:



Otherwise an error message indicating the problem will appear.

4 Click the Dicom tab to modify the Dicom settings.

The Dicom settings window will appear:

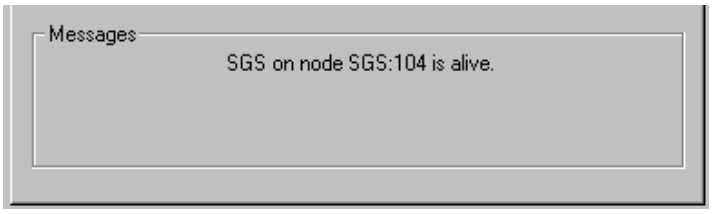


5 Enter the following settings

Field	Description
AE-Title	The AE-title of the destination.
Port Number	The port number of the destination. The default Dicom value is 104.
Version	The Dicom version (1996 or 1999)

6 To test the connection, click Test Connection.

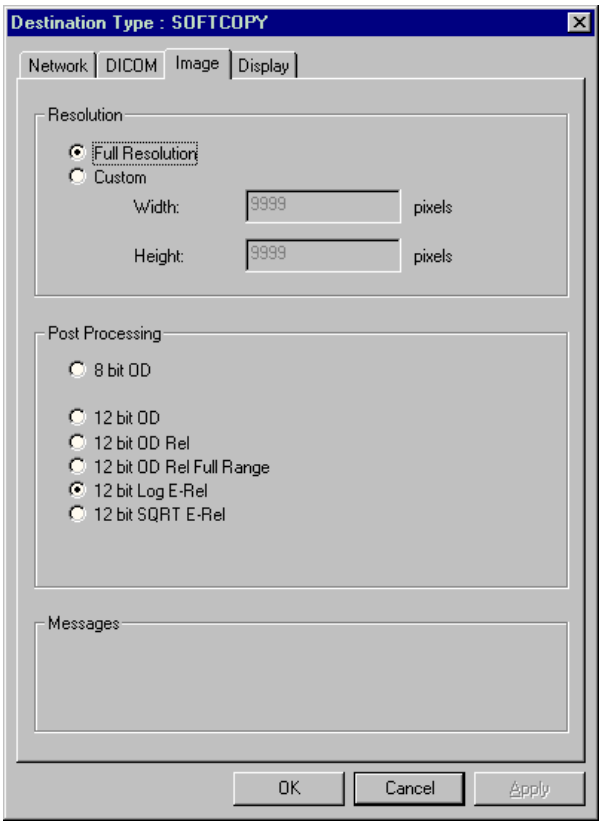
If the result is OK, a confirm message will be displayed in the message box:



Otherwise an error message indicating the problem will appear.

7 Click the Image tab to modify the image settings.

The Image settings window will appear:



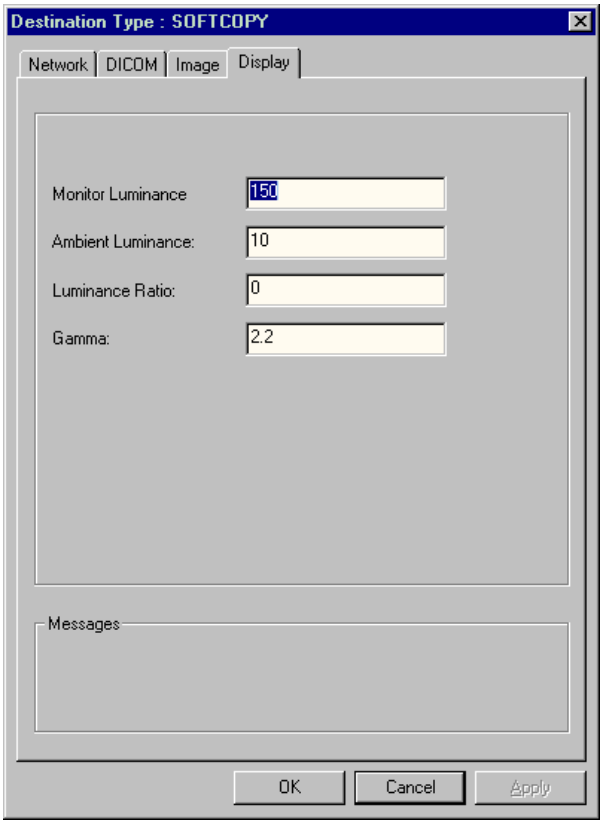
You can now select resolution (full or custom resolution) and post processing parameters.

8 Enter or modify the following Image settings:

To	Do this
Select the resolution parameters which will be used by this destination	**1** Select Full resolution to send images in full resolution to the destination. **2** Select Custom resolution to send images to the destination with a custom resolution. **3** If you have selected Custom resolution, enter a custom value for resolution width and a custom value for custom height.
Select the Post processing parameters which will be used by this destination	Select one of the post processing parameters: [More information???]

9 Click the Display tab to modify the display settings.

The Display tab will appear:



10 Enter or modify the following Display settings:

To	Do this
Enter the monitor luminance	Enter luminance value of the display
Enter the ambient luminance	Enter the ambient luminance value
Enter the luminance ratio	Enter the luminance ratio value
Enter the gamma	Enter the gamma value

11 Click Finish (applies and saves any changes you have made and then closes the window), **Cancel** (closes the window without saving any of the changes you have made) or **Apply** (saves all the changes you have made without closing the window).

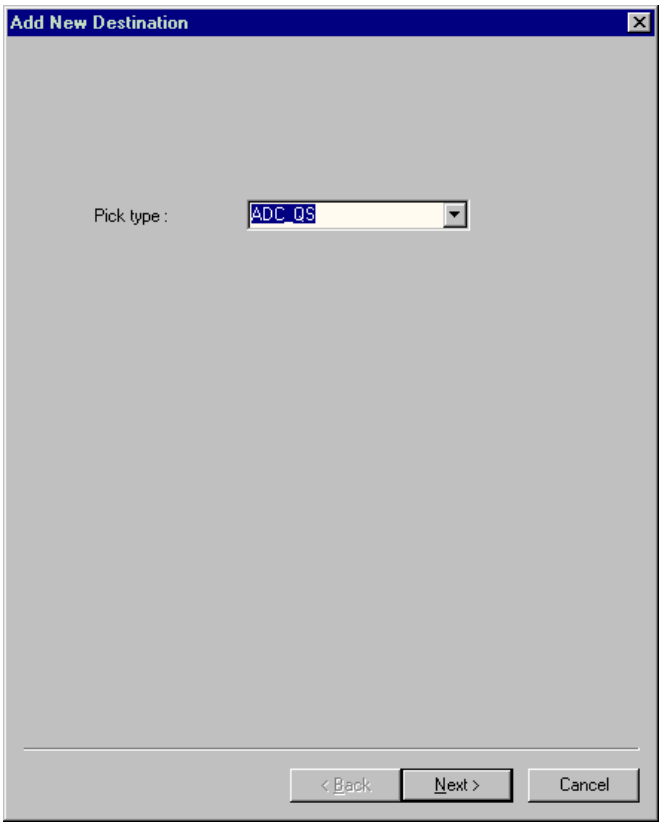
Adding a new Destination using the wizard

To add a new Destination:

1 Click Add destination.

Alternatively, right-click and select new or click **New** on the **Edit** menu.

The Add Destination wizard will appear:



2 Using the Add Destination Wizard, enter the Destination type in first wizard screen and click OK:

You have the choice between ADC QS, Archive or Softcopy.

Depending on your choice, a number of further properties tabs will be available.

3 Using the Add Destination Wizard, enter the following data in the wizard screens:

- Network settings,
- DICOM settings (only for archive and softcopy destinations),
- Image settings (only for archive and softcopy destinations),
- Display settings (only for softcopy destinations).

Click Next or Previous to browse through the different wizard tabs.

The wizard tabs correspond with the properties tabs. For more information, refer to *'Modifying Archive Destination properties'* on page *91*.

4 When you have entered these settings, click Finish.

The newly added Destination will appear in the Destination list.

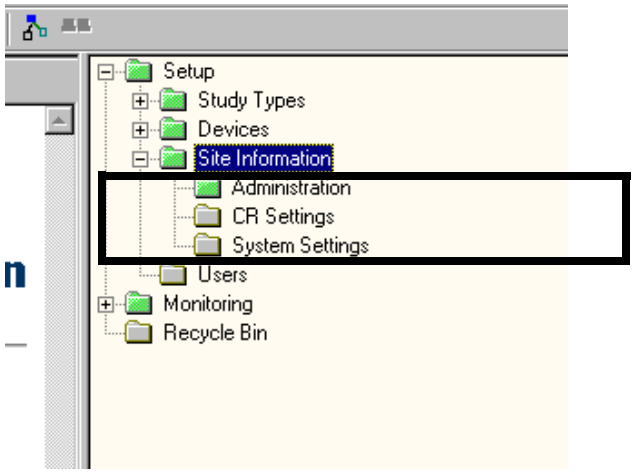
Consulting and modifying site information

You can consult and modify the following Site information data:

- Administration details
- CR Settings
- System settings

To open the Site information folders:

In the Setup folder, click the plus sign next to the Site Information folder to show the Site information folders (Administration, CR Settings, System Settings).



Entering administration details

On the Configuration Viewer Software you can store administrative information concerning:

- the site where the ADC Quality System is located.
- the radiologists and referring physicians that use the system.

The administrative information is part of the output data in case of a service intervention.

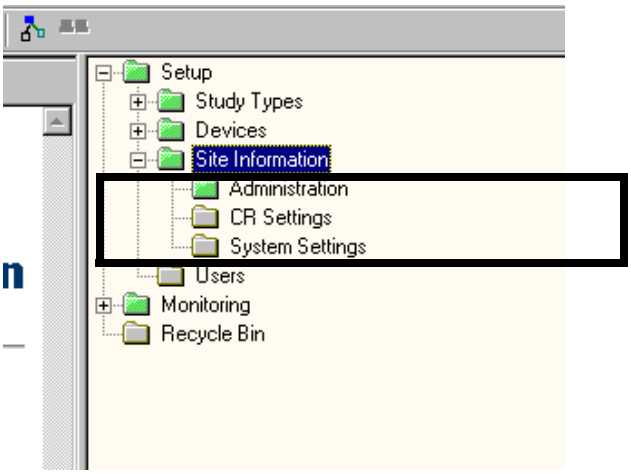
The lists of radiologists and referring physicians can be called up in the IPD Viewer Software. Using this license, you can select a name from the list of radiologists and referring physicians in order to link this name to a study.

Using the Configuration Viewer Software, you can perform the following actions in order to enter site information:

- Enter site information data
- Modify the list of radiologists
- Modify the list of referring physicians

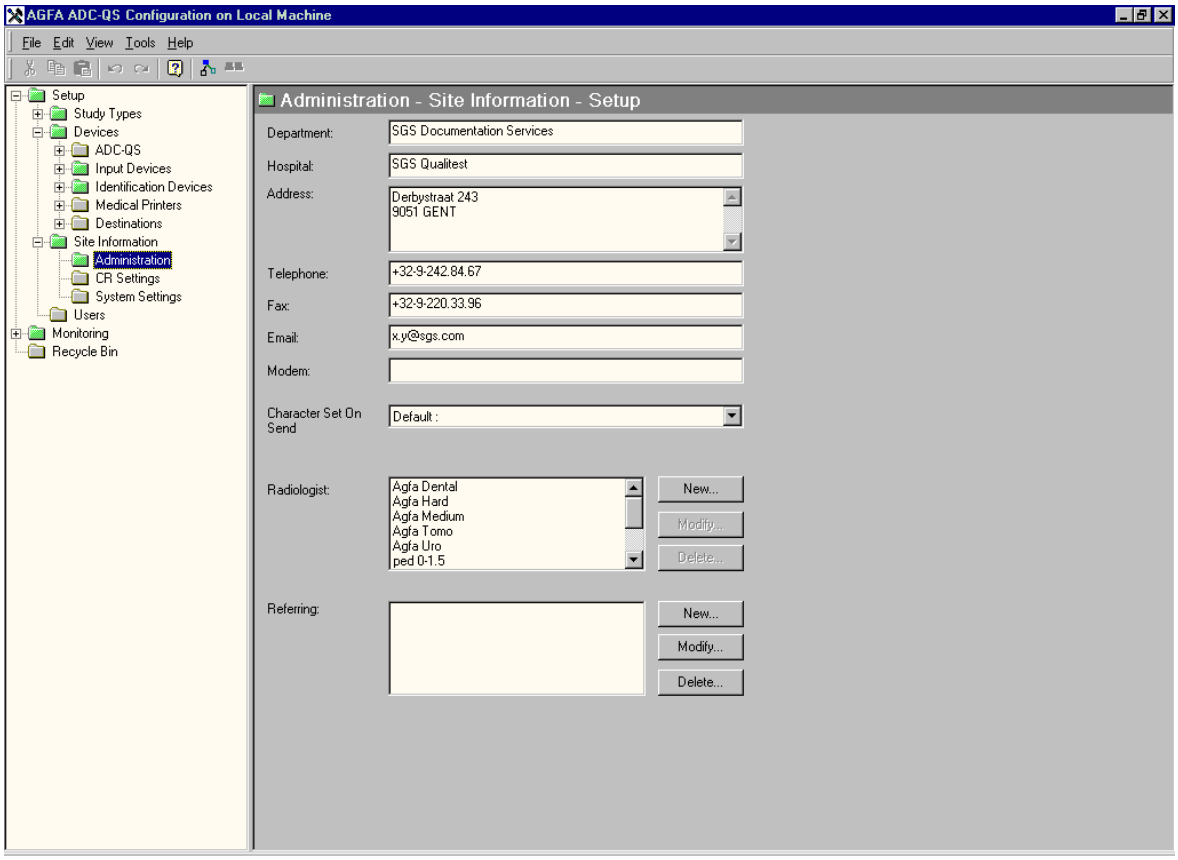
To open the Administration settings folder:

1 In the Setup folder, click the plus sign next to the Site Information folder to show the Site information folders (Administration, CR Settings, System Settings).



2 Click Administration.

The Detail pane will display the configuration parameters of the site:



Entering site information data

To enter site information data:

1 Fill in the following data:

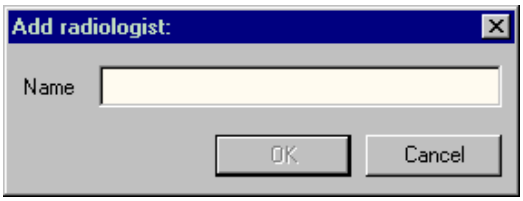
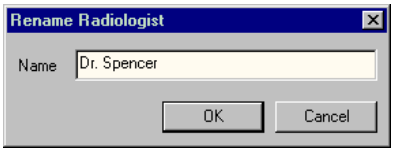
Field	Data
Department	The name of the department that uses the ADC QS system.
Hospital Name	The name of the hospital.
Address	The address of the hospital.
Telephone	The main telephone number of the department.
Fax	The main fax number of the department.
E-mail	The e-mail address of the department.
Modem	The telephone number of the modem of the department.
Radiologist	The list of radiologists
Character set on send	The name of the used character set
Referring	The list of referring physicians

Modifying the list of radiologists

This list alphabetically displays the names of the radiologists working in the department. You can add, delete and modify names.

To modify the list of radiologists:

1 Perform one of the following actions:

To	Do this
Add a new radiologist	**1** Click **New** The Add Radiologist dialog will appear.  **2** Enter the name of the radiologist. **3** Click **OK** or **Cancel**.
Modify the name of an existing radiologist	**1** Click Modify. The Rename Radiologist dialog will appear.  **2** Modify the name of the radiologist. **3** Click **OK** or **Cancel**.
Delete a radiologist	**1** Select a name. **2** Click **Delete**. The system will ask you to confirm. **3** Click **Yes** to confirm, click **No** to cancel.

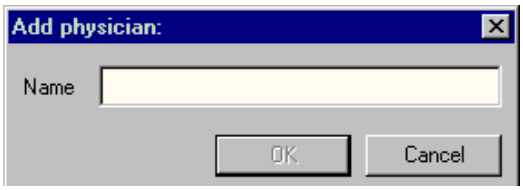
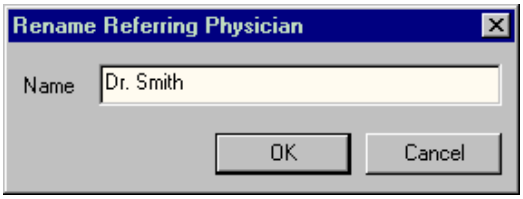
2 Click **OK** (applies and saves any changes you have made and then closes the window) or **Cancel** (closes the window without saving any of the changes you have made).

Modifying the list of referring physicians

This list alphabetically displays the names of the referring physicians affiliated with the department. You can add, delete and modify names.

To modify the list of referring physicians:

1 Click one of the following buttons:

To	Do this
Add a new physician	**1** Click **New** The Add physician dialog will appear.  **2** Enter the name of the referring physician. **3** Click **OK** or **Cancel**.
Modify the name of an existing physician	**1** Click Modify. The Rename Referring physician dialog will appear:  **2** Modify the name. **3** Click **OK** or **Cancel**.
Delete a physician	**1** Select a name. **2** Click **Delete**. The system will ask you to confirm. **3** Click **Yes** to confirm, click **No** to cancel.

2 Click **OK** (applies and saves any changes you have made and then closes the window) or **Cancel** (closes the window without saving any of the changes you have made).

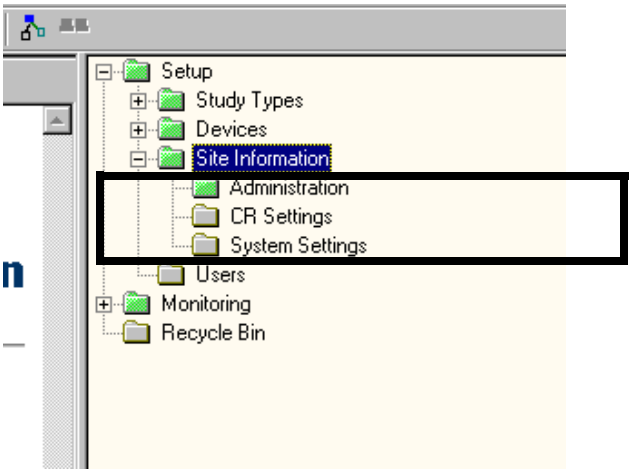
Consulting and modifying CR Settings

Using the Configuration Viewer Software, you can perform the following actions in order to consult and modify the CR Settings:

- Enter CR Settings

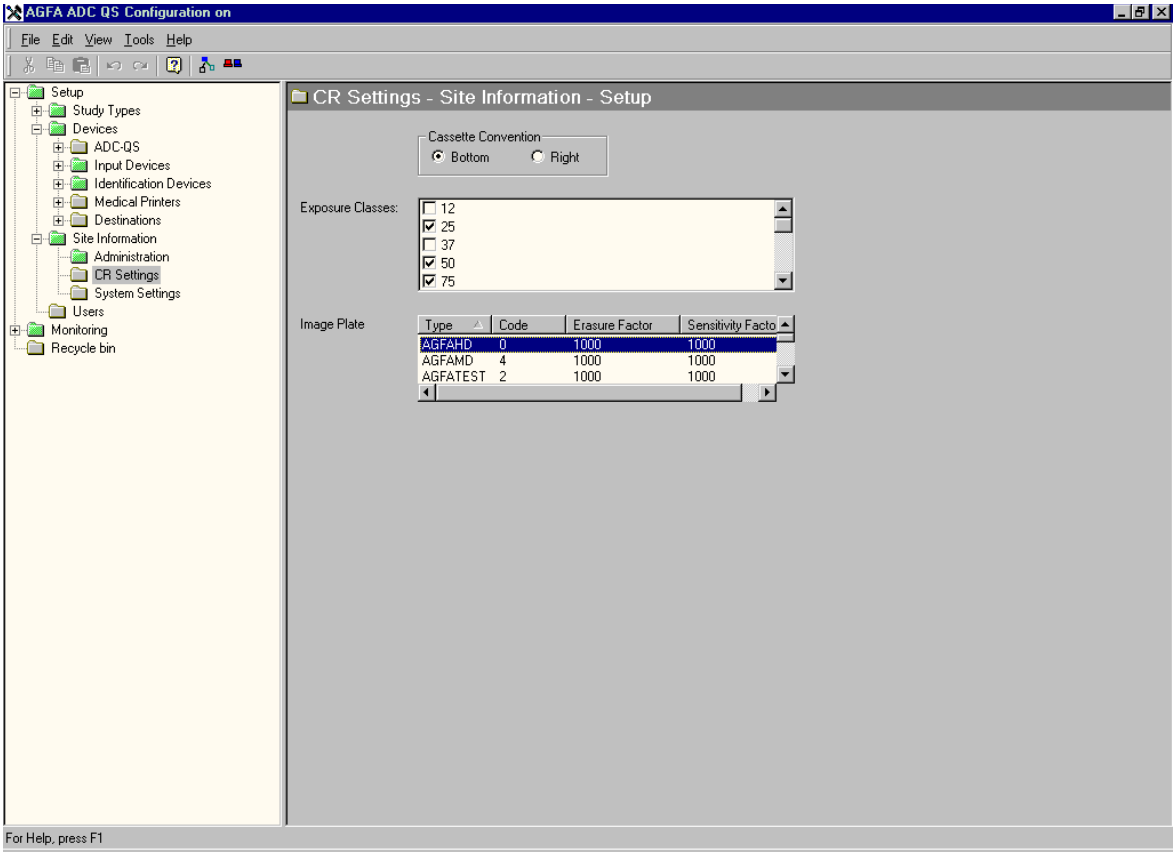
To open the CR Settings:

1 In the Setup folder, click the plus sign next to the Site Information folder to show the Site information folders (Administration, CR Settings, System Settings).



2 Click CR Settings.

The Detail pane will display the current CR Settings:



Entering CR settings

In the Detail pane, you have an overview of the current CR Settings:

- The cassette convention which is currently used in the department.
  You can choose between the old (the convention to keep the text field marker on the cassette to the right) or the new cassette convention (the convention to keep the text field marker on the cassette at the bottom).
- The list of exposure classes which are currently used in the department.
- The list of plate types that are used in the department.

To modify the CR settings:

1 In the Detail pane, modify the data by performing the following actions:

To	Do this
Select a ADC Cassette Convention.	Tick **Bottom** (new ADC convention). Tick **Right** (old ADC convention).
Select exposure classes that will be used in the department.	Select the exposure classes that are used in the department.

Consulting and modifying system settings

Using the Configuration Viewer Software, you can perform the following actions to consult and modify the system settings:

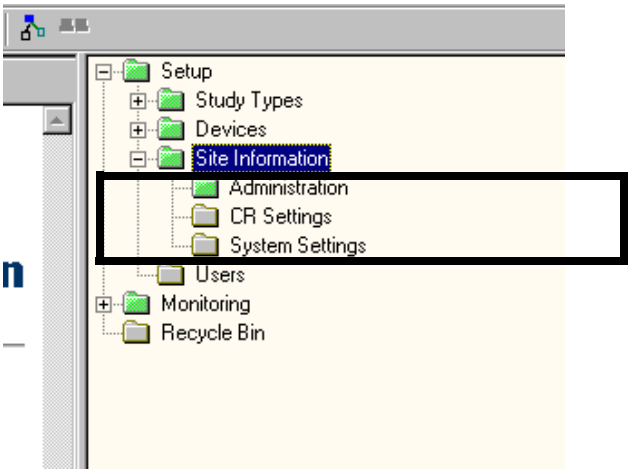
- Enter System Settings

The system settings only have a local effect, i.e. they are only valid for the actual server/client on which you modify the system settings.

Contact your system administrator if you want to modify the system settings. They are specific for the ADC QS System, so changing them can only be done if this is absolutely necessary.

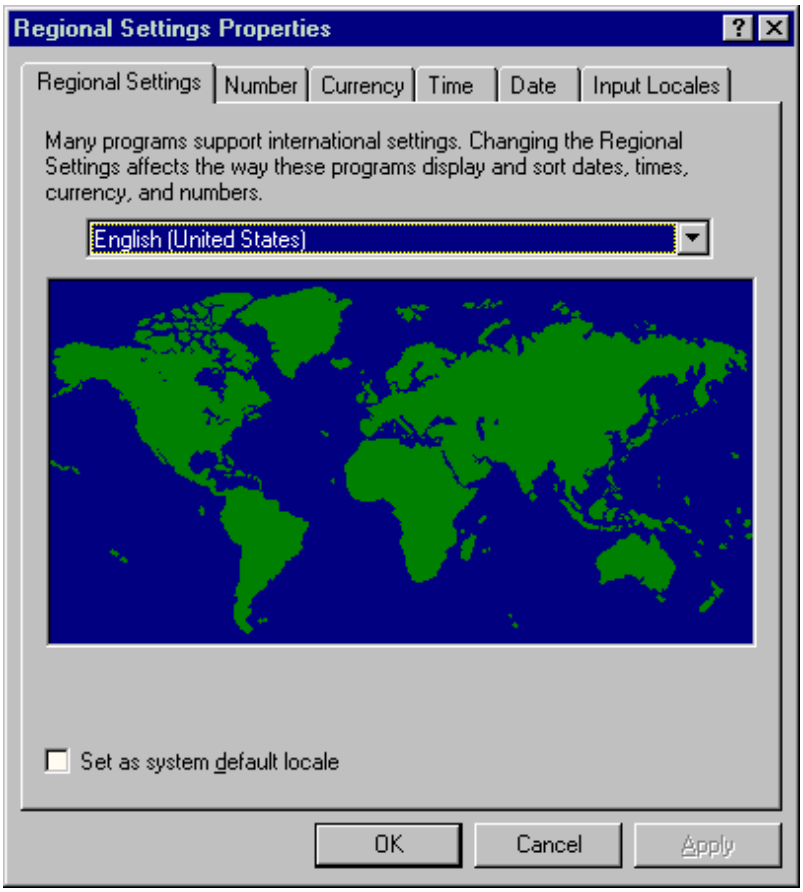
To open the System settings:

1 In the Setup folder, click the plus sign next to the Site Information folder to show the Site information folders (Administration, CR Settings, System Settings).



2 Click System Settings.

The Windows NT Regional Settings window is launched:



Entering System settings

To enter the System settings:

Configure the:

- **language**,
- the **numeric** and **currency** conventions,
- the **date** and **time** format
- the **keyboard** convention.

For more information, refer to the Windows NT System Settings Help.

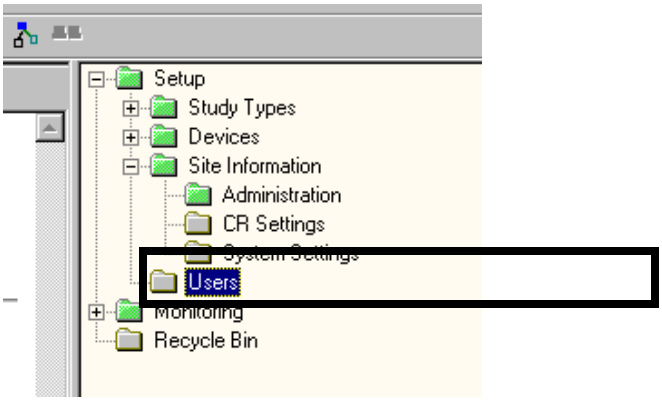
Configuring users

Using the Configuration Viewer Software, you can perform the following actions in order to configure users:

- Enter user information

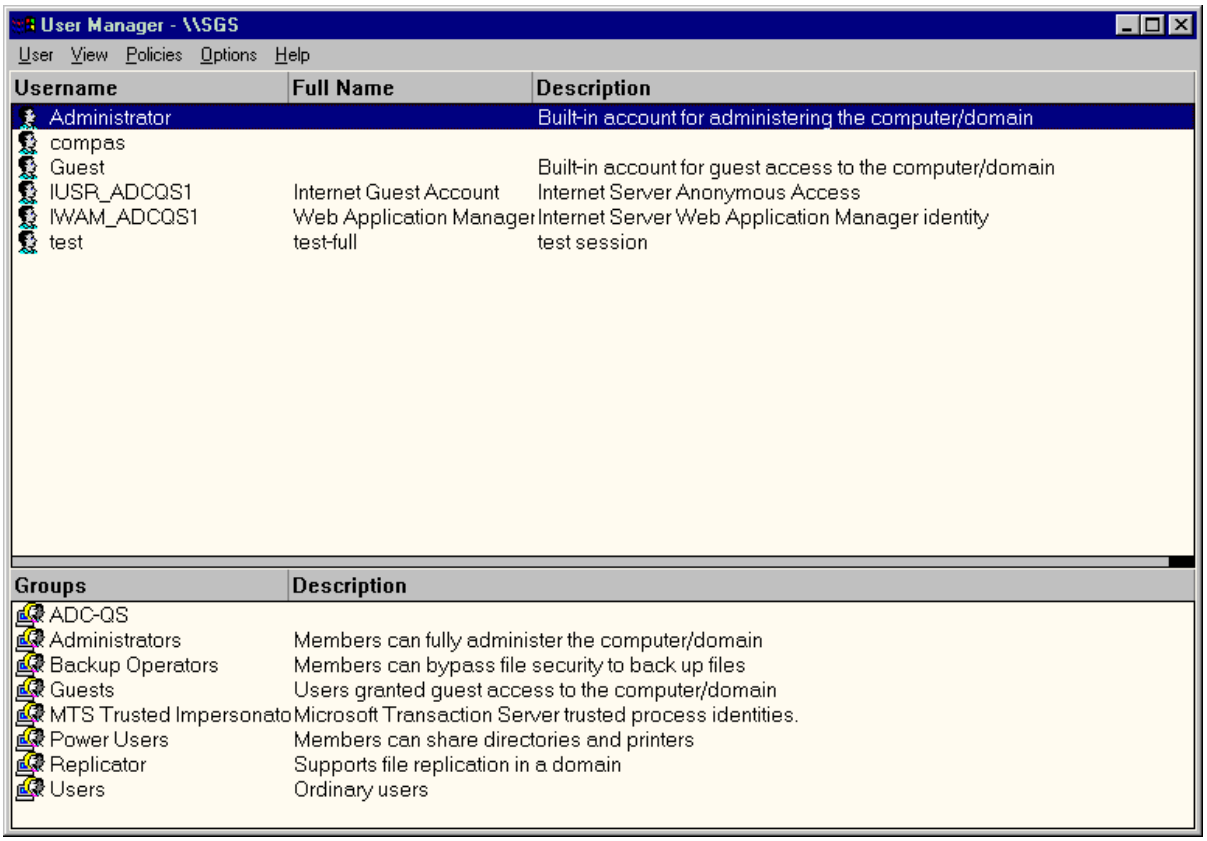
To open the Windows NT User manager window:

In the Setup folder, click Users.



The Windows NT User Manager is launched.

You can check and modify the user names and groups in your system and set-up their access rights.



Entering user information

For more information on entering user information, refer to the Windows NT System Settings Help.

Chapter 3

Monitoring

This chapter covers the following topics:

- Monitoring
- Software management
- Task Management
- Accessing the quality monitoring tools

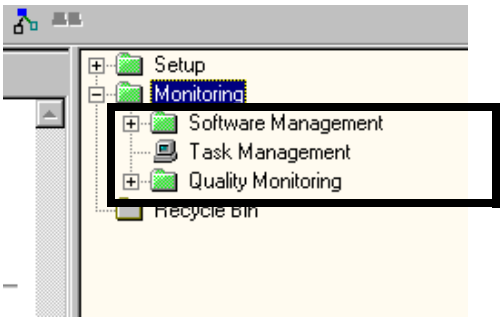
Monitoring

Using the Configuration Viewer Software, you have access to a number of monitoring tools which allow you to perform the following quality monitoring actions:

- manage the software properties
- manage the task properties
- access the quality monitoring tools

To open the Monitoring folders:

Click the plus sign next to the Monitoring folder to show the folders of the Monitoring tools:



Software management

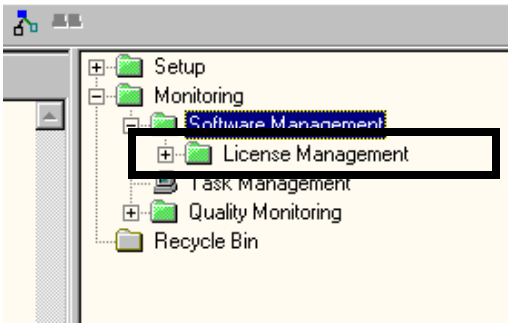
Using the Configuration Viewer Software, you can perform the following software management actions:

- manage the licence properties

To open the Software management tools folders:

1 Click the plus sign next to the Monitoring folder to show the Monitoring tools (Software management, Task management, Quality Monitoring).

2 In the Monitoring folder, click the plus sign next to the Software management folder to show the available Software management tool (license management):



License Management

Using the Configuration Viewer Software, you can perform the following actions in order to manage the software licenses:

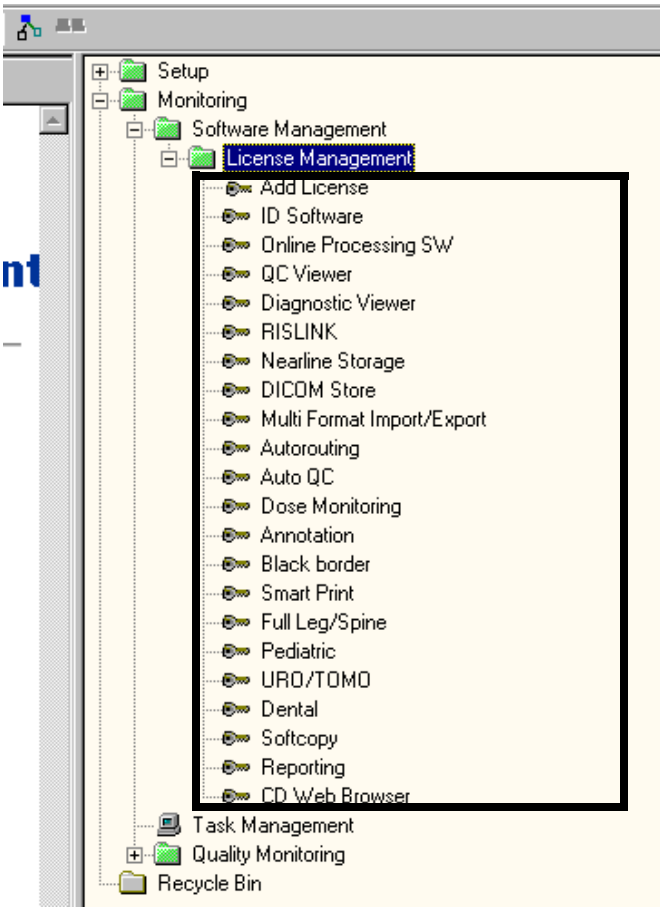
- Configure the list of licenses licences.
- Modify individual license properties.

To open the Licenses folder:

1 Click the plus sign next to the Monitoring folder to show the Monitoring tools (Software management, Task management, Quality Monitoring).

2 In the Monitoring folder, click the plus sign next to the Software management folder to show the available Software management tools.

3 Click the plus sign next to the License management folder to show the available Licenses:



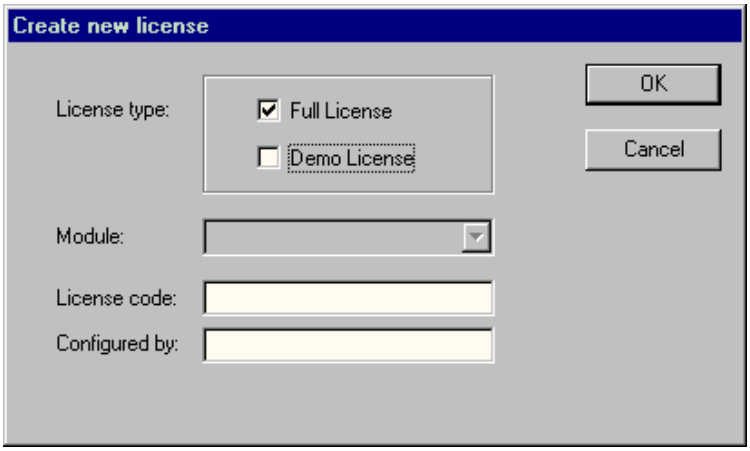
Configuring the list of licenses

You can add and delete licenses from the list view.

To add a new license:

On the **Edit** menu, click **New** to add a new license.

The Create new license window will appear:



4 Fill in the following data:

To	Do this
Specify the license and the license type	**To install a demonstration license:** **1** Select **Demo**. **2** Select the module from the **Module** drop-down list box. **To install a full license:** **1** Select **Full**. **2** Fill in the **license code** in the License code box. **3** Fill in the name of the installer in the 'Configured by' box.
Module	Select a module for demonstration.

5 Click **OK** (applies and saves any changes you have made and then closes the window) or **Cancel** (closes the window without saving any of the changes you have made).

❖ ***You can activate a demo license only once. When you disable it, you will not be able to re-activate it.***

To delete a license:

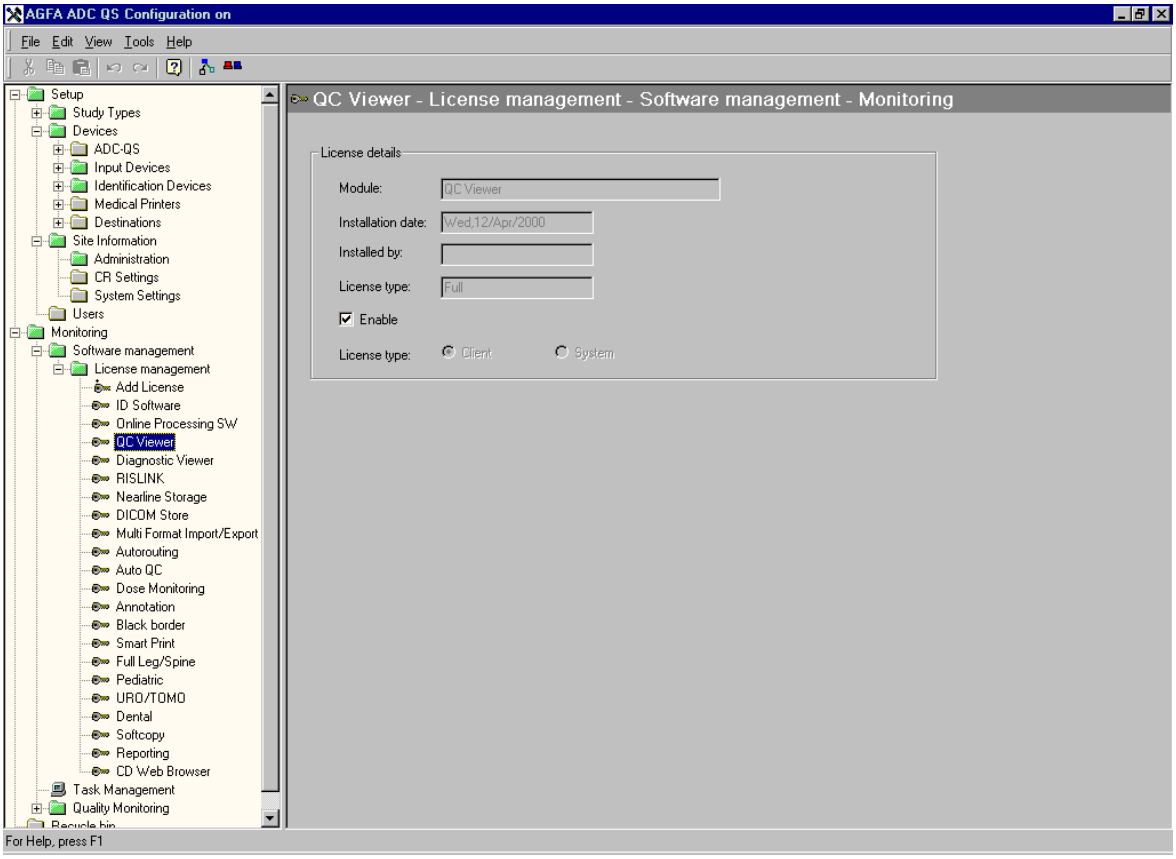
1 Click the license you want to delete.

2 On the **Edit** menu, click **Delete**.
The system will ask you to confirm.

3 Click **Yes** to confirm, click **No** to cancel.

Modifying the properties of individual licenses

1 Click a license.
The Detail pane will display the configuration parameters of the selected license:



You can now consult the following data:

- The name of the module selected in the tree view.
- The date on which the module selected in the tree view was installed.
- The name of the person who installed the module selected in the tree view.
- The license type of the module selected in the tree view, either **Demo** or **Full**.

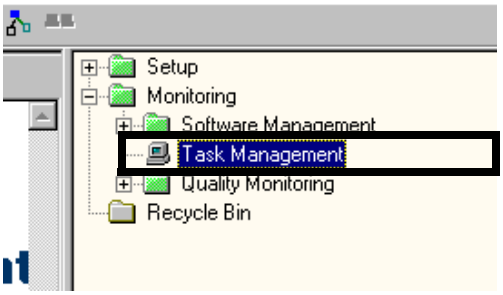
2 To disable a license temporarily, clear the Enable check box.

Task Management

The Configuration Viewer Software contains a number of defined tasks which can be executed, activated and deactivated from the Task management screen. In the Task management screen you also have an overview of the available tasks and its respective names, templates, triggers, last run dates and last run times. A typical example of a task is creating a daily backup.

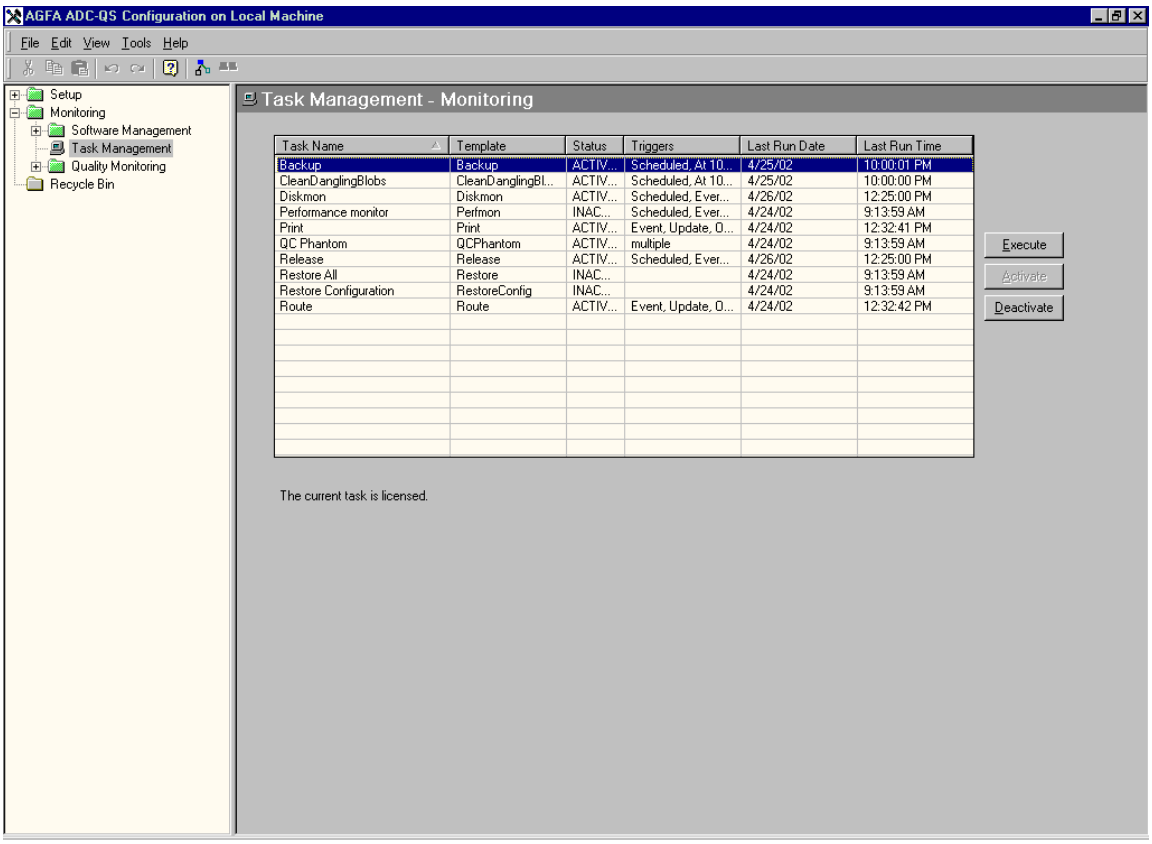
To open the task management folder:

1 Click Task management:



2 In the Monitoring folder, click Task management.

The Detail pane will display the current Task parameters:



The Task management screen displays all the tasks that have been defined and their status. The Status column displays whether they are active or not.

3 Choose one of the following actions:

To	Do this
Execute	Select a task in the **Current Tasks** list and click **Execute** to execute the task immediately.
Activate	Press **Activate** to make a task execute when the trigger conditions are fulfilled.
Deactivate	Press **Deactivate** to no longer execute a task when the trigger conditions are fulfilled.

Accessing the quality monitoring tools

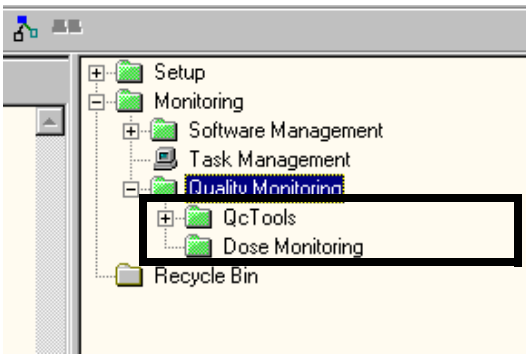
Using the Configuration Viewer Software, you can access the following quality monitoring tools:

- QC tools for Digitizer quality monitoring (spatial - contrast)
- Dose monitoring

To open the Quality monitoring tools folder:

1 Click the plus sign next to the Monitoring folder to show the Monitoring tools.

2 In the Monitoring folder, click the plus sign next to the Quality monitoring folder to show the available Quality monitoring tools:



Opening the QC tools for Digitizer quality monitoring

Using the Configuration Viewer Software, you can access the following QC tools for Digitizer quality monitoring from the Tree view:

- the Contrast tool of the ADC QS QC Software
- the Spatial tool of the ADC QS QC Software

❖ *For a detailed description of the use of the Spatial and Contrast tools, we refer to the manual of the ADC QS Auto QC Software.*

Opening the ADC QS Dose monitoring software

Using the Configuration Viewer Software, you can open the ADC QS Dose monitoring Software from the tree view.

❖ *For a detailed description of the use of the Spatial and Contrast tools, we refer to the manual of the ADC QS Dose Monitoring Software.*

Appendix A

Glossary

Glossary of terms

Term	Explanation
Density profile	Density, i.e. the square root of the exposure, along a line integrated over a rectangular area.
Destination	A destination is a device to which the studies are routed after they have been digitized.
DICOM	Digital Imaging and Communication in Medicine.
Digitizer	The Digitizer scans the exposed ADC image plate, converts the information into digital data and automatically transfers the image to the image processing station for further processing and visualization.
Exposure type	An Exposure type is a set of parameters (concerning image processing, exposure options such as view position and cassette orientation, and collimation) which are by default used for a defined type of exposure. A number of Exposure types make up a Substudy type.
Format toolbar	Toolbar for customizing the image pane. You can either view one, two, four or nine images at a time.
DICOM gateway	The DICOM gateway is the Dicom input port on the server of the ADC QS cluster which enables the server to ‘load’ the images.
ID Viewer	The ADC QS ID Station allows you to link the patient demographic data and examination data of an exposure to the corresponding image.

Image Processing toolbar	Toolbar with buttons for accessing the interactive image processing functions: MUSICA processing, global contrast and intensity adjustment, collimation, etc.
Interactive image processing	Interactively modifying images. Examples: changing the contrast and intensity, manually collimating an image, etc.
List view pane	Pane giving an overview of the studies which you have retrieved via the search pane.
Local database	Database stored on the hard disk of your ADC QS Station.
Medical printer	Printer used to produce diagnostic hardcopies of radiographic images.
Nearline storage device	Device for archiving studies. Here: Digital Linear Tape (DLT).
Remote database	Database stored on a remote volume.
Rislink file	ASCII file containing the study or image data.
Search pane	Pane containing a number of search criteria for retrieving studies from the local database.
Single image mode	Mode in which one image is displayed in the image pane.
Study	A set of images of a medical examination.
Study group	A Study group is a functional collection of Study types.
Study type	A Study type is a collection of Substudy types which have a number of common parameters (a default hold status and common destinations).

Substudy type	A Substudy type is a collection of Exposure types which is by default linked to a defined body part and printing template. A number of Substudy types make up a Study type.
Task	
Thumbnail pane	Pane showing the thumbnail images of studies.
Thumbnail demographic data	Patient data displayed below the thumbnail images.
Transformation	Operations such as rotating, flipping, zooming in/out, magnifying, etc.
Transformation toolbar	Toolbar for accessing functions for image transformation: rotation, flipping, zooming in/out, etc.

Appendix B

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Type 4406/421

Chapter 3.2

1 Tested Storage

(Status June 2002)

Supplier	System	Validation Document
A.L.I	**UltraPACS 4.5**	**000717**
Agfa	**IMPAX 4.1**	**NA**
Amicas	**Archive**	**TBD**
Cedara	**I-Store**	**000715**
Emageon	**Image Archive**	**000716**
GE	**Pathspeed 8.1**	**000697**
GE	**Radworks 5.1**	**000697**
Fuji	**Synapse PACS**	**000740**
Kodak	**AutoRad NT 4.0/4.1**	**000614**
Kodak	**Archive Manager**	**000613**
Philips (Marconi/Algotex)	**MxView**	**000712**
Philips (Marconi/Algotex)	**Intellistore**	**000713/000714**
Siemens	**MagicView PACS**	**000632**
U.S. Dept. of VA	**Vista PACS**	**000653**

2 Supported Printers

(Status June 2002)

Printers	Validation Document	Corresponding ppd-files
AGFA DI2000	**000503**	**AGDI2000.ppd**
AGFA DI3000	**000503**	**AGDI3000.ppd**
AGFA DI4500	**000607**	**AGDI4500.ppd**
Agfa Drystar SI100	**000690**	**AGSI1001.ppd**
Agfa Drystar SI400	**000690**	**AGSI4001.ppd**
AGFA LR3300	**000503**	**AGLR3300.ppd**
AGFA LR5200	**000503**	**AGLR5200.ppd**
AGFA LP400	**000620**	**AGLP4001.ppd**
AGFA DI4500M (in preparation)	**TBD**	**AGD4500M.ppd**
Codonics NP1600	**000739**	**CODN1600.ppd**
Codonics NP1660M	**000739**	**CODN1660.ppd**
Fuji FL-IM D	**000730**	**FFFLIMD.ppd**
Fuji FL-IM DM	**000730**	**FFFLIMDM.ppd**
Fuji FL-IM 3543II	**000730**	**FFIM3543.ppd**
Fuji FL-IM 3535II	**000730**	**FFIM3535.ppd**
Fuji FL-IM 2636II	**000730**	**FFIM2636.ppd**
Fuji FM-DP L	**000730**	**FFFMDPL.ppd**
Fuji FM-DP3543	**000730**	**FFDP3543.ppd**
Fuji FM-DP2636	**000730**	**FFDP2636.ppd**
Fuji Drypix 1000	**000730**	**FFDP1000.ppd**
Fuji Drypix 3000	**000730**	**FFDP3000.ppd**
KODAK IM8100	**000449**	**KDIM8100.ppd**
KODAK IM8200	**000449**	**KDIM8200.ppd**
KODAK IM8300	**000449**	**KDIM8300.ppd**
KODAK IM8500	**000449**	**KDIM8500.ppd**
KODAK IM8600	**000449**	**KDIM8600.ppd**
KODAK IM8700	**000449**	**KDIM8700.ppd**
KODAK KELP1120	**000448**	**KDLP2180.ppd**
KODAK KELP2180	**000448**	**KDLP2180.ppd**
KODAK MLP190 (in preparation)	**TBD**	**KDMLP190.ppd**
KODAK LP160 (in preparation)	**TBD**	**KDLP0160.ppd**
Konica DryPro 722	**000720**	**KONIC722.ppd**